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TRANSACTIONS

OF THE

MEDICAL SOCIETY,

OF THE

STATE OF NEW YORK,

V.65

For the Year 1871.

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ALBANY:
THE ARGUS COMPANY, PRINTERS.
1872.

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STATE OF NEW YORK.

No. 125.

IN ASSEMBLY,

April 3, 1871.

TRANSACTIONS

OF THE

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

MEDICAL SOCIETY OF THE STATE OF NEW YORK,
ALBANY, N. Y., *April 3*, 1871.

To the Hon. WILLIAM HITCHMAN,

Speaker of the Assembly:

DEAR SIR.—I have the honor of transmitting to you the Transactions of the Medical Society of the State of New York for the year 1871.

Very respectfully,

Your obedient servant,

WM. H. BAILEY, M. D.

Secretary.

Medical Society of the State of New York,

Albany, *July* 1, 1871.

The following papers have received the approval of the Committee of Publication.

Thomas Hun,

J. V. P. Quackenbush,

Wm. H. Bailey,

Committee of Publication.

TRANSACTIONS.

ARTICLE I.

Medical Society of the State of New York. Sixty-fifth Annual Meeting.

First Day — Morning Session.

The Medical Society of the State of New York met, pursuant to statute, in the Supervisors' room, City Hall, Albany, on the seventh day of February, 1871, at 11 o'clock A. M.

The President, Dr. S. Oakley Vander Poel, of Albany, called the society to order. Prayer was offered by the Rev. R. W. Clark, D. D., after which the President read the following inaugural address:

Gentlemen of the Society:

The return of another anniversary season permits the interchange of cordial greetings among members gathered from every portion of our great State. Each one brings the garnered ideas and experience of the year to add to the common store, and receives in return fresh vigor and encouragement to labor in the endless duty of relieving suffering and sickness.

The social element fostered by these annual gatherings is by no means the least important benefit accruing to the members; while it is no less instrumental in encouraging the growth and prosperity of the society. In the twenty years with which I have been conversant with its workings, it has passed from thirty or forty up to over two hundred.

The physician, from the very nature of his avocation, seeks the intercourse of his fellows, since, professionally considered, his position is peculiarly isolated. While his duties call for constant activity, and while he mingles with a varied and incessant round of persons, still his professional life, in which his thoughts and aspirations are constantly directed, finds in its natural channels no responsive element; he must meet responsibilities, apply a ready tact and knowledge, stand firm amid suffering and sorrow, without the strengthening influence of friendly professional aid. The other professions, acting in a different forum, bring their members in constant personal communication, derive from one another mutual suggestions and support,

and so preserve more spontaneous and unvaried fraternal and social relations. It is for this reason that medical men should especially cultivate all organizations which bring them in personal relations with their fellows. They will thus learn to know each other better; while suspicion and prejudice, which are so often engendered by isolation, will become disarmed. They, too, will find their professional armor strengthened in the interchange of thought and experience, and will return again to the routine of care, inspired by new thoughts, a disposition for closer analysis, and in what was before the barren field of drudgery and toil, discover fruitful themes for scientific observations.

If there were no other reasons, this one should cause physicians to cherish especially their local as well as their general organizations. Indeed, point me to localities where medical men act in fraternal relations, or where a common zeal inspires advancement, or where the highest aim of the profession is alone recognized, and I will show you that there medical assemblages are most frequent, and medicine in its scientific and humanitarian relations most assiduously cultivated.

In this connection it gives me pleasure to bear testimony to the spirit of activity which has been shown in the cities of New York, Albany and Buffalo, during the year, in maintaining, with the exception of the summer months, semi-monthly meetings of their local organizations. Even in the country districts, where association is more difficult, this necessity for personal intercourse and exchange of sentiment is so keenly felt that organizations comprising the physicians of three or four adjacent counties are formed, and meet at stated intervals for improvement. In addition to those in the southern tier and in south-western New York, one has been formed in northern New York, comprising the district of St. Lawrence, Clinton and Franklin counties.

The benefits which accrue from these organizations are not confined to the members, for the medical press, never more active, nor more worthy of commendation, publish full abstracts both of papers and debates, and thus disseminate to the profession at large thoughts which would otherwise be confined to the society. This publication of the proceedings by the medical journals exerts a reflex benefit upon the local organizations. It cannot have escaped the observation of those who read these reports that the most mature minds of the profession are taking part in them, instead of allowing, as has been too much the practice, the society to be sustained by the younger and more enthusiastic members. They feel and know that the medical press, like the secular, is the great lever for improvement

and advancement, and that by no other channel can the fruits of study and experience find so ready access to the mass of the profession.

A rule of the society which has for some time prevailed, and to which time has given the sanction of a by-law, prohibits the publication of any paper in the Transactions, the whole or any part of which may have previously appeared in print. While the general principle upon which this is founded is eminently proper, still its stringent application is, I think, calculated to work detriment to the true advancement of the society. If I appreciate the subject correctly, the volume of Transactions for each year should, as nearly as possible, represent the status and mental activity of the profession throughout the State. As such it is, I think, regarded in other localities. In reality we know it is by no means the case. The activity which we have noticed as prevailing in many of the medical societies throughout the State, has probably been more fostered and stimulated by the prompt publication of their proceedings in medical journals than from any other influence. It is but a few years since that it was scarcely possible to gather more than a quorum at the anniversary meetings of the medical society of the county of New York. Now that the proceedings are fully reported, the meetings are far more frequent, the attendance large, and the most cultivated talent of the city present. Whoever is conversant with these reports knows full well the ability, learning and observation which characterize them, and which would be far more properly considered a reflex of medical activity in this State than the volume of Transactions as now restricted. This rule induces, also, a quasi antagonism between the "Transactions" and the medical journals, a position which no one can desire to favor. Each has its peculiar and respective field; each almost an entirely different set of readers. Journals catch up the daily, weekly scintillations which emanate from the medical mind, spreading them before the active worker to strengthen experience or widen observation; while the "Transactions," less varied in topics, pass to a larger and in some measure more secluded class, who, from the very force of circumstances, often times are restricted to the Transactions as their quantum of medical literature for the year. The long interval which elapses between the presentation of a paper and its publication in the Transactions, prevents the reading of papers at these meetings which otherwise would naturally have been introduced. If a writer has views of immediate interest or priority of observation to submit, he will seek that channel which most speedily places them before the profession. Under the present rule a year must elapse before they

pass beyond the society. Could any detriment occur, if, after the reading of a paper here, it should be printed in a medical journal: or would it be less worthy of publication in the Transactions? Let me, therefore, suggest that medical organizations be allowed a larger latitude than at present in the recommendation of papers and debates for publication; and that, after the reading of a paper here, it may not be debarred publication in the Transactions, if, in the mean time, it was deemed of sufficient interest to publish it in some journal. The able and conservative censorship of the publication committee must still decide upon the *merits* of papers and debates for publication.

In conformity with the suggestion of my predecessor, this society at its last meeting took a most important step in recommending more thorough study of nervous diseases. Resolutions were unanimously passed, recommending both didactic and clinical teaching in our medical schools on insanity, and other cerebral and nervous affections. Several schools have already responded to the expression of the society, and during their present terms are introducing partial courses in this class of studies. While it is true that the recent progress of this branch of medicine is mainly due to the labors of comparatively few men, and these engaged specially in hospitals, still the fruit of these labors should be disseminated as much as possible among the mass of the profession. If the general practitioner is made conversant with the earlier phases of the different forms of insanity, or taught to recognize the early symptoms of what are generally termed nervous diseases, many cases which now terminate in prolonged insanity could be averted, or years of suffering be spared, in rightly appreciating the character of the nervous affection. It is, therefore, matter of congratulation that this society was the first in this country to recognize the just claims of this section of medical practice, and to take the initiative in recommending that hereafter it should constitute a requisite part of the curriculum of study.

Probably the greatest impediment to positive advancement in the knowledge of the different forms of insanity and nervous diseases has been the difficulty of verifying any fixed pathological changes in the nervous tissue, or any of the internal organs, with the clinical history during life.

Manifestly, any attempt at such verification in private practice would be utterly impossible. Cases are too rarely met, while the pathological changes in the nerve tissue are usually too minute to be recognized except by the practiced microscopist. One naturally turns to our insane asylums as the proper field for this class of

studies. Little positive pathology has, however, thus far been furnished by these institutions. The clinical aspects of disease have been most carefully noted, the results of treatment fully appreciated, but insanity in its positive scientific relations has not advanced.

Here, then, is presented a large and inexhaustible field of study. Mind and thought may not necessarily be materialized, but positive relations may be established between certain aberations of intellect and organic changes in the delicate tissue of the brain.

To the State of New York belongs the honor of first recognizing the importance in its medical aspect of this subject to the welfare of society and the demands of medical science, by the establishment, in connection with the State Asylum at Utica, of a system of pathological investigations in insanity, by the appointment of a *special pathologist*, as one of the medical staff, charged with such duty. As may be well known to the profession, Dr. Gray, the medical superintendent of that institution, after due investigation brought the subject to the attention of the board of managers, who warmly seconded the project, and urged it upon the consideration of the Legislature in 1869.

Governor Hoffman, fully alive to the importance of results accruing from such investigations, made it the subject of recommendation in his message to the Legislature in 1870, and in conformity with his suggestion a law was passed by that body authorizing the appointment. The board of managers designated Dr. Edward R. Hun to the position, and hereafter the reports emanating from that institution will, I doubt not, possess an additional interest to the profession.

In addition to the careful records which have always been kept during life of cases, a minute autopsy is made of every death, and the brain after hardening subjected to microscopic examination. It will not of course be expected that positive results can at once flow from such labors; often a long series of observations are requisite to establish a single fact; yet such fact once recognized becomes at once a standpoint for grouping many disconnected and dissimilar observations.

The appointment of a pathologist to the Asylum for the Insane at Utica was one in which I, as a manager of the institution, took a deep interest. This class of unfortunates, increasing so rapidly in our highly wrought civilization, demands that the utmost limit of positiveness be attained in everything which relates, not only to the causes, but also to the effects of these mental maladies. When other States shall have followed our example, and when a corps of painstaking, conscientious observers shall be formed in the many institutions of this kind, I doubt not results will flow which will add to the scientific

claims of medicine, and humanity be oftener spared the saddest of afflictions, a reason dethroned, a mind lost from the image of its Maker.

I would suggest that the society make proper recognition of its appreciation of the labors and results which are being accomplished in the army medical museum at Washington, in behalf of medical science. The results which have been obtained in photographing tissue under high magnifying power mark an era in histology and pathology, and make the observations of a favored few the common property of the profession. The labors of those engaged in this skilled undertaking should be encouraged by the approval and support of medical men.

It affords me pleasure to comply with the suggestions of the New York Medico-Historical Society, that there be a complete registration of the regular medical profession of the State; also, that each county society have a committee on registration, whose duty shall be to prepare and preserve a complete list of the past and present members of the society; also, to forward on or before the first of March, annually, a list of the names, post-office addresses, and office hours of all the regular practitioners of medicine in their county, to the editor of the "New York Medical Register." The value and necessity of this publication are so fully recognized, as to need no special commendation.

During the past year the record of mortality has been unusually numerous, both among honorary and permanent members. Among the list of honorary members is one whose memory will be blessed, and who can truly be regarded a *benefactor* of his *race*. I refer to Sir James Y. Simpson, late of Edinburgh, universally known to our profession, as indeed to mankind at large, for the introduction of chloroform as an anæsthetic. "He rose from the obscurity of a country village to be the favorite of his sovereign; the peer of the highest literary and scientific authorities; the cynosure of the medical and surgical intellect of this century. It was as if by magic, but his only talisman was the perfect bravery, persistency, sincerity and simplicity of his life. Quick to perceive, he was equally apt in executing. He expended no unnecessary force; he begrudged no required effort. He was not only the skillful accoucheur and the thoughtful, wise gynæcologist, but his surgical suggestions gave him high position among surgeons." He was taken in the prime of life, not sixty years of age, when ripe experience could have borne valuable fruit; still, the work he had already done will cause his name everywhere

to be a household word, "never to be forgotten as long as the primal curse, from which through God's grace he took the sting, shall lie upon suffering woman."

I recommend that appropriate resolutions be passed by the society, and forwarded to his family.

I must be content with reciting merely the names of other deceased honorary members, each possessing merit and individuality:

Benjamin W. Dudley, Lexington, Ky.; Landon C. Rives, Cincinnati, Ohio; T. G. Geoghegan, Dublin; Charles A. Pope, St. Louis, Mo.

Deceased permanent members are:

Platt Williams, Charles Barrows, Edward Hall, J. H. Reynolds, William B. Bibbins.

The death of Dr. Bibbins is one of peculiar sadness to the society. For some years he had been a regular attendant at our meetings, and taken a deep interest in the proceedings. The vigor of health which pervaded his countenance betokened years of activity and usefulness. There were, in his character, traits which commanded respect, and which made him a most useful member in organizations of this nature.

In addition to his devotion to the interests of the profession, he had a straight-forwardness of purpose, combined with executive ability and rectitude; invaluable traits in positions of trust and responsibility.

Even while I write there comes to me the sad news of the death of a dear friend, a highly gifted and skilled physician. Though not on the list of permanent members, his name had been placed among those eligible, and the society would soon have been honored in his permanent election. I allude to the death of Dr. George T. Elliott. Very few have risen so rapidly to eminence in the profession, or distributed more generously the rich fruits of experience as an aid to his fellow workers. His life has been sacrificed to his ardor, his zeal and the intensity of application in his special department. With his gifted intellect he possessed, also, endearing social qualities, so that his approach to the sick room was greeted no less as the trusted and loving friend than as the skilled physician. Snatched, like the learned Bard, before the zenith of his honors or labors was reached, he leaves in his writings and memory a record of honor.

In conclusion, gentlemen, let me hope our proceedings will be marked by harmony and the spirit of mutual edification, and that the results of our deliberations shall show, what in reality the name of our society imports, the true position of advancement of the profession of the State.

The following is a list of the gentlemen in attendance:

PERMANENT MEMBERS.

Drs.	S. O. Vander Poel	Albany.
	G. A. Dayton	Mexico.
	Wm. H. Bailey	Albany.
	Jno. V. Lansing	Albany.
	Wm. Govan	Stony Point.
	A. N. Bell	Brooklyn.
	Joseph Bates	Lebanon Springs.
	T. B. Reynolds	Saratoga Springs.
	Thomas F. Rochester *	Buffalo.
	Israel Parsons	Marcellus.
	E. Odell	Otsego.
	C. C. Covel	Kingston.
	William Lamont	Charlotteville.
	Jno. P. Sharer	Little Falls.
	Robert Frazier	Camden.
	Dyer Loomis	New Berlin.
	C. C. Wyckoff	Buffalo.
	J. V. Kendall	Baldwinsville.
	Harvey Jewett	Canandaigua.
	C. C. F. Gay	Buffalo.
	J. Kneeland	South Onondaga.
	H. K. Bellows	Norwich.
	James L. Babcock	Albany.
	Levi Moore	Albany.
	Charles G. Bacon	Fulton.
	H. S. Crandall	Leonardsville.
	Frederick Hyde	Cortlandville.
	Caleb Green	Homer.
	J. N. Northrop	Albany.
	Charles H. Porter	Albany.
	N. C. Husted	New York.
	C. S. Wood	New York.
	George Cook	Canandaigua.
	Jno. G. Orton	Binghamton.
	H. K. Willard	Williamsburgh.
	A. L. Saunders	Brookfield.
	Darwin Colvin	Clyde.
	Henry D. Didama	Syracuse.
	Hiram Corliss	Greenwich.

* Also delegate from University of Buffalo.

Drs. Jno. P. Gray	Utica.
James L. Banks	New York
Jno. G. Adams	New York.
M. L. French	Jonesville.
C. V. Barnett	Coxsackie.
H. W. Dean	Rochester.
H. D. Bulkley	New York.
Edward S. F. Arnold	Yonkers.
George Burr	Binghamton.
Henry C. Gray	Cambridge.
John Ferguson	Albany.
Joseph C. Hutchison	Brooklyn.
Peter P. Staats	Albany.
Francis Burdick	Johnstown.
James Ferguson	Glen's Falls.
G. Botsford	Greenville.
Jno. J. Flint	Fort Edward.
Thompson Burton	Fultonville.
Jacob G. Snell	Amsterdam.
George F. Shrady	New York.
Lewis A. Sayre	New York.
William C. Wey	Elmira.
William H. Craig	Albany.
William Manlius Smith	Manlius.
S. G. Wolcott	Utica.
Henry D. Noyes	New York.
Henry B. Whiton	Troy.
J. V. Cobb	Rome.
J. V. P. Quackenbush	Albany.
J. K. Chamberlayne	Utica.
L. I. Tefft	Syracuse.
A. F. Doolittle	Herkimer.
I. I. Buckbee	Fonda.
Edward H. Parker	Poughkeepsie.
Jacob Hunt	Utica.
Samuel Hart	Brooklyn.
Ferris Jacobs	Delhi.
James McNaughton	Albany.
Ellsworth Eliot	New York.
C. R. Agnew	New York.
Samuel Gilmore	Fleming.

Drs.	Alexander Ayres	Fort Plain.
	Wilson T. Bassett	Cooperstown.
	Henry S. Downs	New York.
	William T. Swart	Canandaigua.
	Austin White	Mexico.
	Devillo White	Sherburne.
	E. S. Lyman	Sherburne.
	Lyman Barton	Willsborough.
	S. H. Freeman	Albany.
	J. R. Van Kleek	New York.
	H. B. Salmon	Stuyvesant.
	William Tibbitts	Mechanicsville.
	Morgan Snyder	Fort Plain.
	J. H. Wheeler	Athens.
	J. O. Van Hœvenbergh	Kingston.
	William S. Hoffman	Port Byron.
	J. R. Boulware	Albany.
	E. R. Squibb	Brooklyn.
	O. M. Allaben	Margarettville.
	Joseph White	Canajoharie.
	Jacob S. Mosher	Albany

DELEGATES.

Albany County.

Drs.	James S. Bailey	Albany.
	E. R. Hun	Albany.
	Jno. P. Witbeck	West Troy.
	Joseph Lewi	Albany.

Allegany County.

——— ——— ———.

Broome County.

	W. Bassett	Binghamton.

Cattaraugus County.

	Thomas J. Wheeler	Conewango.

Cayuga County.

	A. S. Cummings	Cayuga.
	James W. Wilkie	Auburn.

Chautauqua County.

	Thomas D. Strong	Westfield.

Chemung County.

Drs. T. H. Squire ..... Elmira.

Chenango County.

George W. Avery..... Norwich.

Clinton County.

A. C. Butler..... Plattsburgh.

Columbia County.

George P. Salmon..... ... New Lebanon.

Cortland County.

William Fitch ..... Dryden.

Delaware County.

Robert L. Waterbury ..... Margarettville.

Dutchess County.

M. R. Holbrook..... Poughkeepsie.

Erie County

—— —— ..... ——.

Essex County.

E. D. Ferguson ..... Essex.

Franklin County.

D. W. Jones..... Ellenburgh.

Fulton County.

Eugene Beach ..... Gloversville.

Genesee County.

—— —— ..... ——.

Greene County.

E. Whittlesey..... Durham.

Hamilton County.

—— —— ..... ——.

Herkimer County.

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Jefferson County.

H. Gordon P. Spencer ..... Watertown

Kings County.

Alexander Hutchins ..... Brooklyn.
William C. Otterson..... Brooklyn.

Lewis County.

Drs. Franklin B. Hough ..... Lowville.

Livingston County.

F. M. Perine ..... Dansville.

Madison County.

F. W. Root ..... East Hamilton.
R. H. Gray ..... Eaton.

Monroe County.

—— —— . ..... ——.

Montgomery County.

Norman L. Snow ..... Canajoharie

New York County.

Nathan Bozeman ..... New York.
Ernst Krackowizer ..... New York.
Abraham Jacobi ..... New York.
B. S. Thompson ..... New York.
Andrew H. Smith ..... New York.
Robert Newman ..... New York.
T. A. Emmett ..... New York.
Alfred E. M. Purdy ..... New York.
James Ross ..... New York.
Stephen Rogers ..... New York.
Salvator Caro ..... New York.
Gustavus S. Winston ..... New York.

Niagara County.

S. T. Clark ..... Lockport.
C. N. Palmer ..... Lockport.

Ontario County.

E. W. Simmons ..... Canandaigua.

Oneida County.

Edwin Hutchinson ..... Utica.
H. G. Du Bois ..... Camden.

Onondaga County.

—— —— ..... ——.

Orange County.

R. V. R. Montfort ..... Newburgh.

Orleans County.

Drs. —— —— ..... ——.

Oswego County.

Lucius Stevens ..... Constantia.
Frank S. Low ..... Pulaski.
C. C. P. Clark ..... Oswego.

Otsego County.

G. W. Cooke ..... Otego.

Putnam County.

—— —— ..... ——.

Queens County.

—— —— ..... ——.

Rensselaer County.

M. H. Burton ..... Troy.
C. L. Hubbell ..... Troy.

Richmond County.

C. Henry King ..... Stapleton.

Rockland County.

T. Blanch Smith ..... Nyack.

St. Lawrence County.

B. F. Sherman ..... Ogdensburgh.
Louis Sanburn ..... Heuvelton.
E. H. Bridges ..... Ogdensburgh.

Saratoga County.

N. H. Ballou ..... Mechanicsville.

Schenectady County.

A. M. Vedder ..... Schenectady.

Schoharie County.

—— —— ..... ——.

Schuyler County.

—— —— ..... ——.

Seneca County.

—— —— ..... ——.

Steuben County.

Samuel Ensign ..... Bath.

Suffolk County.

Drs. —— —— ..... ——.

Sullivan County.

B. G. McCabe ..... Monticello.

Tioga County.

—— —— ..... ——.

Tompkins County.

—— —— ..... ——.

Ulster County.

A. C. Hull ..... Olive
R. Loughran ..... Kingston.

Warren County.

Hiram McNutt ..... Warrensburgh.

Washington County.

J. D. Stewart ..... Coila.
A. J. Long ..... Whitehall.

Wayne County.

A. F. Sheldon ..... Pultneyville.

Westchester County.

—— —— ..... ——.

Wyoming County.

—— —— ..... ——.

Yates County.

William Oliver ..... Penn Yan.

Albany Medical College.

A. Van Derveer ..... Albany.

New York Academy of Medicine.

D. B. St. John Roosa ..... New York. city.

Bellevue Hospital Medical College.

—— —— ..... ——.

College of Physicians and Surgeons.

—— —— ..... ——.

University of New York.

—— —— ..... — —.

Long Island College Hospital.

Drs. —— —— ..... ——.

University of Buffalo.

Thomas F. Rochester* ..... Buffalo.

Geneva Medical College.

—— —— ..... ——.

New York State Lunatic Asylum.

—— —— ..... ——.

Ohio State Medical Society.

A. N. Read ..... Norwalk, Ohio.

Invited Members.

E. G. Clark ..... Sandy Hill.
J. C. Herrick ..... Corinth.
J. G. Porteous ..... Luzerne.
George H. Hubbard ..... Lansingburgh.
F. B. A. Lewis ..... Watertown.
G. D. Van Vranken ..... Ballston.
J. L. La Moree ..... Grahamville.
G. L. Halsey ..... Unadilla.
Stephen R. Millington ..... Poland.
Walter Booth ..... Booneville.
E. W. Carmichael ..... Sand Lake.
Charles A. Robertson ..... Albany.
William Morgan ..... Albany.
Henry March ..... Albany.
Alexander Van Woert ..... Vischer's Ferry.
Asahel Perry ..... South Easton.
S. Fleet Speir ..... Brooklyn.
J. C. Bourne ..... Masonville.
C. H. Burbeck ..... Brunswick.
J. M. Bigelow ..... Albany.
William F. Thoms ..... New York.
John Parr ..... Buel.
Samuel Peters ..... Cohoes.
Henry S. Case ..... Albany.
John Thompson ..... Albany.
Henry Lansing ..... Etna.
L. Granger ..... Lawrenceville, Pa.

* Also permanent member.

Drs. L. Griffin	Binghamton.
J. G. Johnson	Saratoga.
Isaac D. Meacham	Bainbridge.
E. H. Davis	Albany.
J. S. McLaury	Walton.
C. G. Pomeroy	Newark.
W. B. Chase	Windham Centre.
R. H. Ward	Troy.
Daniel M. Stimson	Albany.
R. R. McIlvane	New York.
A. S. Coe	Oswego.
M. M. Lamb	Albany.
M. R. Peck	Glen's Falls.
William H. Murray	Albany.
Hiram Wiggins	Elbridge.
S. F. McFarland	Oxford.
Robert J. Bullock	Albany.
Alexander A Edmeston	Albany.
Lemuel Cross	Cobleskill.
Joseph C. Richardson	Philadelphia, Pa.
George H. Newcomb	Albany.
S. G. De La Mater	Duanesburgh.
Theodore F. Cornell	New Baltimore.
H. H. Green	Paine's Hollow.
A. Wilson	Albany.
Lyman Congdon	Jacksonville.
A. W. Tupper	North Granville.
R. H. Sabin	West Troy.
—— Woodward	———.
Charles Hazeltine	Jamestown.
Benjamin A. Fordyce	Union Springs.
D. V. O'Leary	Albany.
George T. Stevens	Albany.
F. S. Low	Pulaski.
William Holbrook	Palmer, Mass.
Staats Winne	Albany.
W. S. Cooper	Troy.
A. S. Wolff	Plattsburgh.
C. W. Hammond	Herkimer county.
J. S. Hawley	Brooklyn.
M. L. Dunkelmeyer	Albany.

On motion of Dr. Didama, the several subjects alluded to in the President's inaugural were referred to appropriate committees.

The President announced the following committees:

On Credentials — Drs. A. N. Bell, Govan and McNutt.

Committee of Arrangements — Drs. J. V. P. Quackenbush, Wm. H. Bailey and J. V. Kendall.

Business Committee — Drs. Wm. C. Wey, Alfred Underhill and H. B. Whiton.

Dr. Underhill not being present, Dr. N. C. Husted, of New York, was appointed in his stead.

Obituary Notices — Dr. Platt Williams, by Dr. Thomas Hun; Dr. J. H. Reynolds, by Dr. R. L. Allen; Dr. Charles Barrows, by Dr. Edwin Hutchinson; Dr. Edward Hall, by Dr. A. S. Cummings; Dr. Wm. B. Bibbins, by Dr. Ellsworth Eliot; Dr. Geo. T. Elliot, by Dr. Fordyce Barker; Dr. Alfred E. Varney, by Dr. D. M. Hamlin.

Dr. J. V. Cobb offered the following:

Resolved, That the President appoint a committee of three to extend an invitation to the Governor, and to such members of the Legislature as belong to the medical profession, to attend the meetings of this Society during it session.

Adopted, and the following committee appointed: Drs. Cobb, Gray of Washington county, and Bozeman.

Committee on Publication of Papers (as suggested by the President) — Drs. Hutchison, Bacon and Orton.

Committee on Psychology — Drs. Gray, Hyde and Banks.

Committee on Microscopic Labor in the office of the Surgeon-General of the United States — Drs. E. R. Hun, McFarlane and Ward.

Dr. Burr offered the following:

Resolved, That the committee on credentials be and it is hereby directed to transcribe from the register of the Society the names of all permanent members and delegates from county societies, which may, from time to time, during the sessions of this society, be entered therein, as fast as such names shall be registered. The list thus made up shall be for the use of the Secretary in calling the ayes and noes, or in taking any other vote which the Society may direct. Carried.

Dr. Burr, from Binghamton, read a paper entitled "Laceration of Perinæum and Bladder, with introduction of pieces of wood, formation of calculi and operation." (See Article III.)

Dr. Sayre read a paper entitled "Two cases of Luxation of the Elbow, backward." (See Article IV.) Both were referred to the publishing committee.

Dr. Quackenbush, from committee of arrangements, introduced to the President Dr. McIlvaine of Ohio, also Dr. Reed, a delegate from the same State. When the President, in a few complimentary and pertinent remarks, introduced them to the Society and invited them to take part in its deliberations.

Dr. McIlvaine, responding, said: It gives me great pleasure to offer to you the congratulations of the Medical Society of the State of Ohio. We have just celebrated our twenty-fifth year. We consider that we have a claim upon the civilization and progress of the great Empire State, from the fact that you have contributed 83,000 of the total population of Ohio. Our Society was organized by a few (by three) earnest, enterprising men, in the year 1846. No description of mine could portray to you the interest which we feel in this honored Society. Our Society has been conducted as a society for the last twenty-five years. We feel that we have a claim upon the Empire State. It gives me great pleasure therefore to be the first to bear our congratulations to the noble profession of the Empire State.

Dr. Reed also said: I will not occupy the time of the society long, except to tender the congratulations to you of our society. Many of the members of the profession in our State received their education in this State, and it is but natural that the members of the profession in our State should look upon you as our elder brother. We shall feel a pleasure in listening to what you have to say.

Dr. Harvey Jewett read a paper on "Puerperal Eclampsia." (See article V.)

Dr. Kneeland: I have seen two fatal cases of Puerperal Eclampsia, one of which was treated by large bleedings, and the woman died undelivered. The other died three days after delivery. My impression from observing these two cases is, that whatever merits Dr Jewett's treatment has, I have asked myself the question, can we eliminate poison enough by one hypercathartic?

Dr. Frazier said: I had what seemed to me a very singular case of convulsions previous to confinement. The patient had two or three convulsions daily. The lower extremities were œdematous, the bowels were costive, the urine was scanty and albuminous. I used hydragogue cathartics, occasionally nitre Dovers powder, bromide and bicarbonate of potash, and a liniment containing belladonna to the spine. The convulsions grew less frequent; in a few days the patient was confined without convulsions.

Dr. Quackenbush reported several of his cases with the treatment.

Dr. Sherman: Whether the cases reported by Dr. Quackenbush

are suggestive of improvement or not, certain it is that these cases are the ones which give all men of experience trouble. I have not had many such cases, but my practice is to keep my patient under the influence of chloroform, which will tend more rapidly to open the mouth of the uterus. Can the same effect be produced by some other means? In reference to that, I do not suppose that convulsions ought to be allowed to remain, for where you eliminate the poison you eliminate the blood, and the true way is to get rid of it through some channel.

The following communication was then read and referred to the committee on ethics.

To the New York State Medical Society:

The undersigned members in good and regular standing of "The Medical Society of Niagara County," respectfully represent to your honorable body, that at the regular semi-annual meeting of said society, held on the....day of.....notice of or the place of holding such meeting not having been published as the regulations and customs of the society require, a minority of the members, nine only being present, including the president and treasurer, and they did assume to disband the society without notice to the other members thereof, and on the.....day of....., did proceed to organize a new society, designated "The Niagara County Medical Society," and assume to transfer the property and funds of "The Medical Society of Niagara County," to the new so-called society, and appointed delegates to represent it, or them, in the State Medical Society, all of which will more fully appear from a printed copy of the proceedings published in the Lockport Daily Union, on the 30th of January, 1871, appended. It is not necessary for us to characterize these high-handed proceedings as they deserve, but only to say that the assumptions of fact in the resolution to disband are imaginary and not real.

"The Medical Society of Niagara County" was legally incorporated in the year 1823, and ever since the year 1825, including that year, has been represented in your honorable body by delegates, and has in all things complied with the law and your rules and regulations, and has been in good and regular standing as your records will show; and the undersigned, feeling aggrieved and wronged, not to say outraged, by the action taken, have prepared this memorial, and call your attention to the facts in the case for your information, that you may take such action as to your honorable body may seem meet and proper in the premises; and to this end we respectfully submit for your consideration the following points:

1st. A legally organized medical society has no right in and of itself to disorganize.

2d. The attempt to destroy "The Medical Society of Niagara County," being illegal, is void; and therefore in law the Medical Society of Niagara county is not affected thereby.

3d. The statute does not authorize the organization of a medical society in a county where one already exists; therefore the so-called Niagara County Medical Society has no legal existence, and no right to representation in your honorable body.

4th. That the action of Drs. S. T. Clark, and Carlos N. Palmer, the regular delegates from "The Medical Society of Niagara County," in participating in the attempt to destroy it, is tantamount to a resignation of their offices as its delegates, and they should not be permitted to sit as members of your honorable body.

In conclusion we protest against the so-called "Niagara County Medical Society" being in any manner recognized by your honorable body.

A. WALTER TRYON,
D. S. FASSET,
THOS. P. CADWALLADER,
A. H. KOON,
W. H. VAN BUREN,
J. B. HARTWELL, M. D.,
CALVIN COOKE (Original mem.),
M. S. KITTINGER, M. D.,
GEO. P. EDDY, M. D.,
LAFAYETTE BALCOM, M. D.,
H. McG. WILLIAMS, M. D.

Dr. Granger, of Lawrenceville, Tioga Co., Penn., was introduced to the Society.

The President, Dr. Vander Poel, extended an invitation to the members of the State Medical Society, and the medical gentlemen present, to an entertainment at his house on Wednesday evening, immediately after the President's address.

On motion the Society then adjourned to meet at three P. M., in the hall of the Young Men's Association in State street.

FIRST DAY—AFTERNOON SESSION.

The Society met pursuant to adjournment in the lecture room of the Young Men's Association at three P. M., and was called to order by the President. It was resolved to postpone the reading of the minutes till the morning of each day.

The President announced the following committee on nominations: 1st district, John G. Adams; 2d district, R. Loughran; 3d district, J. R. Boulware; 4th district, Francis Burdick; 5th district, John P.

Gray; 6th district, H. K. Bellows; 7th district, H. D. Didama; 8th district, Thos. F. Rochester.

Dr. Orton presented the following communication from the Broome County Medical Society:

The following resolution was unanimously adopted at the annual meeting of the Broome County Medical Society, held in the city of Binghamton, on the 4th of October, 1870:

Resolved, That, in the judgment of this Society, the annual election by the State Society of permanent members for the several senatorial districts, is exclusively due to those physicians eligible, who are residents of the districts for which such election is made; and that to elect, as permanent member of the State Society for one district, any person residing in another, is an infringement of the rights and privileges of those who are eligible for permanent membership in such district.

A true copy from the minutes.

J. G. ORTON, *Secretary.*

On motion it was laid on the table for the present.

Dr. John V. Lansing, Treasurer of the Medical Society of the State of New York, submitted his annual report for the year 1870, as follows:

Feb. 1, 1870. Balance in treasury, as per report 1869..... $47 19

Received from societies and institutions, as follows:

No. of delegates.	Society.	Paid by—	Amount.
4....	Albany	Drs. J. S. Bailey, 1870.....	$20 00
1....	Allegany	.....	.....
1....	Broome	E. G. Crafts, 1870	5 00
2....	Cattaraugus ..	T. J. Wheeler, 1869	6 00
	do ..	do 1870	10 00
2....	Cayuga	.....	.....
2....	Chautauqua ..	.....	.....
1....	Chemung	H. S. Chubbuck, 1870	5 00
1....	Chenango	W. H. Beardsley, 1870	5 00
1....	Clinton	.....	.....
2....	Columbia	W. H. Pitcher, 1870	10 00
1....	Cortland	Wm. Fitch, 1870	5 00
2....	Delaware	J. T. McLaury, 1870	10 00
2....	Dutchess	M. R. Holbrook, 1870.....	10 00
5....	Erie	White and Ring, 1870.....	25 00
1....	Essex	.....	.....
1....	Franklin	D. W. Jones, 1869	5 00
	do	do 1870	5 00
1....	Fulton	Francis Burdick, 1870	5 00

No. of delegates.	Society.	Paid by—	Amount.
1....	Genesee.....	.....	.....
1....	Greene	Drs. E. Whittlesey, 1870.....	$5 00
	Hamilton	.....	.....
1....	Herkimer	E. S. Walker, 1869	6 00
	do	do 1870	5 00
2....	Jefferson	H. S. Hendee, 1869.....	6 00
	do	do 1870.....	10 00
9....	Kings	E. R. Squibb, 1870	45 00
1....	Lewis	A. R. Gebbie, 1869	5 00
	do	do 1870	5 00
1....	Livingston ...	F. M. Perine, 1868.....	5 00
	do ...	do 1870.....	5 00
2....	Madison	I. N. Goff, 1870	10 00
3....	Monroe	.....	.....
1....	Montgomery .	John Parr, 1870	5 00
21....	New York....	W. B. Bibbins, 1870	105 00
2....	Niagara	.....	.....
4....	Oneida.....	H. N. Porter, 1870.....	20 00
3....	Onondaga	H. D. Didama, 1870	15 00
2....	Ontario	E. W. Simmons, 1870	10 00
2....	Orange	R. V. K. Montfort, 1869.....	6 00
	do	do 1870.....	10 00
1....	Orleans	.....	.....
3....	Oswego	C. C. P. Clark, 1869	9 00
	do	W. H. Rice, 1870.....	15 00
2....	Otsego	H. Láthrop, 1870	10 00
1....	Putnam	.....	.....
2....	Queens	W. D. Wood, 1870.....	5 00
	do	Balance due 1870, $5.00	
3....	Rensselaer....	Le Roy McLean, 1870	15 00
1....	Richmond....	C. H. King, 1869	5 00
	do	do 1870.....	5 00
1....	Rockland	Wm. Govan, 1870	5 00
3....	St. Lawrence .	B. F. Sherman, 1870	15 00
2....	Saratoga	.....	.....
1....	Schenectady ..	A. M. Vedder, 1870.....	5 00
1....	Schoharie	Wm. Lamont, 1870	5 00
1....	Schuyler	J. W. Thompson, 1870	5 00
1....	Seneca	.....	.....
2....	Steuben.....	Samuel Ensign, 1870.....	10 00

No. of delegates.	Society.	Paid by—	Amount.
1....	Suffolk.....	.....	.....
1....	Sullivan	Drs. La Moree, 1870.....	$5 00
1....	Tioga.....	C. R. Heaton, 1868	5 00
	do	do 1869	5 00
	do	do 1870	5 00
1....	Tompkins	E. C. Moe, 1869	5 00
	do	do 1870	5 00
3....	Ulster	R. Loughran, 1870.....	15 00
1....	Warren	H. McNutt, 1870	5 00
2....	Washington ..	H. Corliss, 1869	6 00
	do ..	do 1870	.....
2....	Wayne	A. F. Sheldon, 1870.....	10 00
3....	Westchester ..	W. H. Helm, 1870.....	15 00
1....	Wyoming	.....	.....
1....	Yates.....	Wm. Oliver, 1869	5 00
	do	do 1870	5 00

Received from institutions as follows:

Albany Medical College, per J. V. Lansing, 1870.....	5 00
Bellevue Hospital Medical College, 1870.	
College of Physicians and Surgeons, N. Y., 1868, 1869, 1870.	
Geneva Medical College, 1869, 1870.	
University, New York, 1870.	
University of Buffalo, per Dr. White, 1870.....	5 00
Long Island College Hospital, 1868, 1869, 1870.	
New York Academy Medicine, per H. P. Farnham, 1870 .	25 00
Initiation fee of five dollars each for the following named permanent members, 1870:	
William Lamont, Robert Frazier, J. S. Mosher, T. F. Rochester, Henry D. Noyes, William S. Hoffman, J. O. Van Hoevenberg, H. C. Hendrick, J. W. Thompson, S. H. French, 2d, W. H. Craig, G. F. Shrady, Ellsworth Eliot, E. M. Moore, James L. Babcock, Francis Burdick (16) ..	80 00
Interest on Merrit H. Cash fund, received from J. H. Armsby, trustee	35 00
	$801 19

The expenditures for and on account of the Society during the past year have been as follows:

Paid William H. Bailey account as follows:

Paid services as Secretary, 1869	$250 00	
telegraph dispatch to Minnesota State Medical Society	5 00	
postage	51 50	
services of page	3 00	
services of door-keeper	10 00	
services of marshal, and for stationery furnished by him in 1869	10 00	
		$329 50
John L. Mitchell, stenographer		50 00
Rugg & Stetson, bill for stationery furnished Secretary		20 30
Weed, Parsons & Co., bill for printing by-laws, etc		53 50
Argus Co. advertising notice annual meeting		2 50
J. C. Butler, use of chairs and tables		8 00
		$463 80
Balance in treasury, February 7, 1871		337 39
		$801 19

ALBANY, *February* 7, 1871.

JOHN V. LANSING, *Treasurer.*

The condition of the Merrit H. Cash fund was reported by the Treasurer as follows:

Year.					
1864.	Received interest from J. H. Armsby, trustee				$35 00
1865.	do	do	do	do	35 00
1866.	do	do	do	do	35 00
1867.	do	do	do	do	35 00
1868.	do	do	do	do	35 00
1869.	do	do	do	do	35 00
1870.	do	do	do	do	35 00
					$245 00

Paid out of Merrit H. Cash fund:

1864. Paid A. N. Bell, M. D., prize essay	35 00
1869. Joseph C. Hutchison, prize essay	100 00
February 7, 1871, balance in treasury belonging to the Merrit H. Cash fund	$110 00
February 7, 1871, balance in treasury of general funds belonging to Society	227 39
Total balance in treasury	$337 39

Societies and Institutions reported by the Treasurer in arrears of annual dues as follows:

No. of delegates.	Societies.	Amount.
	Allegany	
2....	Cayuga, 1870	$10 00
2....	Chautauqua	
1....	Clinton, 1870	5 00
1....	Essex, 1869, 1870	10 00
1....	Genesee, 1870	5 00
1....	Hamilton	
3....	Monroe, 1870	15 00
2....	Niagara, 1870	10 00
1....	Orleans	
1....	Putnam	
2....	Queens, balance 1870	5 00
2....	Saratoga, 1870	10 00
1....	Seneca, 1870	5 00
1....	Suffolk, 1868, 1869, 1870	
2....	Washington, 1870	10 00
1....	Wyoming	
	Bellevue College Hospital, 1870	5 00
	College Physicians and Surgeons, 1868, 1869, 1870	15 00
	Geneva Medical College, 1869, 1870	10 00
	University of New York, 1870	5 00
	Long Island College, 1868, 1869, 1870	15 00

On motion the report was accepted and referred to the following auditing committee, viz: Drs. Sherman, Saunders and Doolittle. Subsequently the committee reported as follows:

The committee appointed to examine the Treasurer's accounts report as follows: That they have examined his report for the year 1870, together with the vouchers of expenditures accompanying the same, and find the same correct.

B. F. SHERMAN,
A. L. SAUNDERS,
A. F. DOOLITTLE.

Dated *February* 7, 1870.

Dr. Rochester, chairman of committee on prize essays, read the following report:

The committee on prize essays respectfully report that there were

three competitors for the "Hiram Corliss Prize," "On the cause, prevention and cure of tubercular phthisis." All the papers evinced labor and research. The committee award the prize to the essay bearing the motto.

> "Ut potero explicabo non tamen quasi Pythius Apollo,
> Certa ut sint et fixa quæ dixero."—CICERO.

For the "Merritt H. Cash" Prize there were but two contestants. The committee decide in favor of the paper with the motto "Quid Tam," and entitled "A new method of arresting surgical hemorrhage by the artery constrictor, designed for the instantaneous hermetic closure of arteries, without the use of ligatures or other foreign substances to be left in the wound."

The committee regard the other paper, bearing the motto "Avant Coureur," as scientific, useful, and in some sense original, and after revision by its author recommend it for publication. The committee regret that they have not had the benefit of the aid and advice of their colleague, Prof. Sanford Eastman, who is absent in California in search of health.

THOMAS F. ROCHESTER,
HENRY W. DEAN,
Committee on Prize Essay.

February 7, 1871.

Upon opening the envelopes it was found that the essay on the cause, prevention and cure of tubercular phthisis, bearing the motto

> "Ut potero explicabo, non tamen quasi Pythius Apollo,
> Certa ut sint et fixa quæ dixero."—CICERO.

to which the "Hiram Corliss" prize was awarded, was written by Ghislani Durant of New York. (See article IX.)

And the one on a new method of arresting surgical hemorrhage, by the artery constrictor, designed for the instantaneous, hermetic closure of arteries, without the use of ligatures or other foreign substance to be left in the wound, bearing the motto "Quid Tam," was written by S. Fleet Spier, M. D., of Brooklyn. (See article XXI.)

Dr. Wm. H. Bailey said, that agreeably to the resolution of the Society at its last annual meeting, regarding the number of annual sessions which have been held, he would report that he had examined the subject, and found that the Society was chartered by the State Legislature in 1806, the first session was held in 1807, and that there had been an annual meeting every year since, making this meeting the sixty-fifth instead of the sixty-fourth. The mistake occurred in

1859, when Dr. Willard was secretary, he calling the meeting in 1859 the fifty-second instead of the fifty-third.

The report was received and the Secretary was directed to number future meetings properly.

The Secretary also moved that the names of the presidents be placed in a separate column, with the year in which they served. It was so directed.

Dr. Rochester moved the acceptance of the President's invitation to an entertainment at his house Wednesday evening. It was unanimously adopted.

Dr. E. R. Squibb offered the following preamble and resolutions:

Whereas, There appears in the published transactions of this Society for the year 1868, at page 142, *et sequelæ*, an article entitled, "Effects of Meteorological Influences on Health, by Wm. Faulds Thoms, M. D., surgeon to the Howard Hospital, physician to the New York Dispensary, surgeon to the Eastern Dispensary," etc.; and

Whereas, This article is in large part copied word for word from Parkes' "Manual of Practical Hygiene," second English edition, commencing at page 430, without credit given, or marks of quotation used, and is therefore a plagiarism; be it

Resolved, That this Society owes it to Dr. Parkes of London, as well as to itself, to apologize for this appropriation of his labor and language without credit.

Resolved, That a copy of this preamble and resolutions, authenticated by the signatures of the President and Secretary of the Society, be sent to Dr. Parkes of London. Adopted.

Dr. Nathan Bozeman read a paper on Urethrocele Catarrh and Ulceration of the Bladder in the Female. (See Article XXVII.) It was referred to the publishing committee.

The President announced the following the Committee on Ethics: Drs. Orton, Dean and Doolittle.

Dr. John P. Gray read a paper on the Dependence of Insanity on Physical Disease. (See Article XVIII.)

Dr. Corliss: I should like to talk fifteen or twenty minutes on matters and things in general, but I shall confine my remarks to the paper read by Dr. Gray. I have listened to the paper, and have been considerably refreshed. He glances, at the last, at what I consider the most important consideration to arrive at; that is, the causes producing insanity, so as to arrive at or ascertain their prevention. To many of us, who have been observing these matters for fifty or sixty years, there are causes of insanity that lie far back of their develop-

ment. The great object of the profession should be to ascertain the remedy for the cause, for in that lies the prevention. There are many cases of insanity which come up at the end of a course of years, and are not much talked about, but which, nevertheless, constitute a large share of the cases of insanity. There are causes and conditions which put the constitution in a state of poverty, and these causes are peculiar. I wanted to merely raise a little thought upon these points. I have listened with admiration to the paper of Dr. Gray. He is learned and wise, and has an excellent chance for observation, but I think that the great work that he should accomplish is to endeavor to see, if possible, where the remedy for the cause is, and then to prevent the exciting cause, and thus avoid the results. Insanity is growing very rapidly; is increasing among us, and can be prevented. We live in a fast age, when everything is strained to the highest tension. If it does, as Dr. Gray observed, exist in physical causes, if we can find the causes, we can, by their removal, prevent and cure the disease.

An obituary notice of Dr. Thompson was then read by Dr. Hyde.

The business committee also recommended that when the Society adjourn it adjourn to meet this evening at eight o'clock, in this place, to hear Prof. Noyes on "The Theory of Vision." The business committee also recommended the Society to meet at ten o'clock to-morrow morning, which was amended by Dr. Corliss to meet at nine o'clock.

Dr. Wey, chairman of the business committee, read the following by titles, to be referred to the publication committee:

Biographical sketch of the late Dr. Thomas Cock, of New York, by Gurdon Buck, M. D., and Trismus Nascentium, by James S. Bailey, M. D.

The President announced the name of F. B. Hough, from Lewis county, to fill the vacancy in the committee on registration of births, deaths and marriages. The committee now stands: Dr. J. V. Lansing, J. S. Mosher and F. B. Hough.

The President said the following communication from the Clinton County Medical Society had been handed him, and he wished the Secretary would read it:

CLINTON COUNTY MEDICAL SOCIETY,
PLATTSBURGH, N. Y., 10*th Jan.*, 1871.

At the annual meeting, the following resolutions were unanimously adopted:

Whereas, The members of the Clinton County Medical Society did recommend Arthur S. Wolff, M. D., physician of the Clinton State

Prison, our late delegate to the State Medical Society, for permanent member; and,

Whereas, The society did not act on their recommendation, but on the contrary have elected William H. Craig, of Albany, who is located in the third district, and not in the fourth, from which he was nominated; therefore, be it unanimously

Resolved, That we again recommend Arthur S. Wolff, M. D., as a fit and proper person, professionally and socially, to become a permanent member of the State Medical Society. In addition to our claims, being one of the oldest county societies in the State, we have no permanent member. Arthur S. Wolff, M. D., is the oldest eligible member in the fourth district; his election would be gratifying to every member of our society. And be it further

Resolved, That our delegate be instructed to urge our claims in favor of Arthur S. Wolff, and that a copy of these resolutions be transmitted to the President of the State Medical Society and Nominating Committee.

A. C. Butler,
President Clinton County Medical Society.

The following was also presented:

To the Medical Society of the State of New York:

The undersigned, members of the medical profession residing in the fifth senatorial district, respectfully represent, that as appears by the published volume of the Transactions of the Society, they have been made eligible for election as permanent members of said Society; that said eligibility, with many of the undersigned, has existed for several years, and that the honor of an election as permanent member of the State Society is, by the constitution and by-laws of said Society, justly their due.

The undersigned have learned with surprise that at the last annual meeting of the State Society, their claims were passed over, and a gentleman from another district was elected as one of the two entitled to an election from the fifth senatorial district, and that a person thus elected was a resident of the city of Albany.

The undersigned respectfully protest against such an unjust proceeding, claiming that the yearly selection for permanent members of the Society for the several districts should be made from the residents of said district who have been made eligible, and that to pass them by and to give the election to a non-resident is, in their judgment, a disregard of their privileges and a violation of the constitution and

by-laws of the society, against which the undersigned respectfully remonstrate.

		When made eligible.
G. L Halsey	Otsego	1866
T. B Smith	Otsego	1867
J. K. Leaning	Otsego	1868
Horace Lathrop	Otsego	1870
G. W. Cooke	Otsego	1870
Frank D. Beebe	Madison	1867

September, 1870.

Dr. Burr moved that the paper, together with the resolutions, be laid upon the table.

Dr. Quackenbush: I should like to inquire whether it is proper to table a communication. It is not a resolution nor a motion, and hence is not debatable, and should be allowed to take the usual course of all communications. If they wish to bring this matter up and debate it, it should be done in the form of a resolution. I object to having this laid on the table. A communication from a society is a different thing from a motion or a resolution. I move that it be referred to the proper committee.

Dr. Corliss: What is the object of laying this on the table? Is it for the purpose of raising a discussion; or is it for the purpose of laying it on the table till doomsday. If I am in order, I should like to say that there is a great deal of log-rolling in the New York State Medical Society, almost as much as there is in the legislature.

Dr. Burr: I moved to lay the communication on the table for the purpose of calling it up at the appropriate time, and will give the gentleman over the way an opportunity to second my motion. We wish an opportunity for explanation, but at this time of the session it is not appropriate. If these communications are laid on the table, at the appropriate time they can be taken therefrom, and the whole subject disposed of. This is the object of my moving to lay it on the table.

Dr. Quackenbush: I think that a motion is always in order. I grant, also, that a motion to lay a resolution on the table is always in order. But a communication is not always in order. It is neither a resolution nor a motion, but simply a communication, and, as such, it should always be allowed to take the same course as others.

Dr. Corliss: This is both a resolution and a motion, as well as a communication.

Dr. Burr moved that it be laid on the table, to be taken up to-morrow. Motion lost.

On motion, the Society adjourned to meet in the evening at eight o'clock, to hear the paper of Dr. Noyes, and to meet to-morrow morning at nine o'clock.

First Day—Evening Session.

The Society met agreeably to adjournment, at eight o'clock. The President, Dr. Vanderpoel, called the meeting to order.

Dr. Henry D. Noyes, of New York, addressed the meeting upon "Astigmatism and other defects of sight from abnormal refraction, illustrated by the magic lantern."

Upon motion, the meeting adjourned to meet at nine o'clock Wednesday morning.

Second Day—Morning Session.

The Society was called to order by the President. Prayer was offered by the Rev. Dr. Halley.

The minutes of the day preceding were read and approved.

Dr. E. H. Parker read a communication from the Dutchess County Medical Society, regarding the election of permanent members. It was referred to the committee on nominations.

Dr. Samuel Hart read the following report which was accepted:

Mr. President and Members of the New York State Medical Society:

Having the honor to be elected as one of the delegates to the annual meeting of the Maine Medical Association, I enjoyed the pleasure of attending the meeting, which was held in Bangor, and continued three days. The meeting was of much interest. Several papers were read and discussed, were ably arranged and treated, and were truly of a scientific and professional value.

Your delegate was kindly received; invited to participate in the deliberations of the Association, and entertained with that kind hospitality which none know how to bestow better than medical men.

Dr. H. Corliss reported as follows:

As your delegate, I attended the fifty-ninth anniversary of the Rhode Island State Medical Society, held in Providence, R. I., June 8th, 1870. The President, Dr. Ely, presided over its deliberations. I was introduced by the President, and, as was expected, made some remarks. For the ensuing year, Dr. George L. Collins, of Providence, was elected President. They have only one day's session at

their annual meeting, but they have quarterly meetings in different sections of the State. The business of the session consisted in reports of cases and discussions. Our profession in Rhode Island is emphatically progressive, being alive and engaged in all the great enterprises of the profession.

After the close of the business of the meeting, it adjourned to the Aldrich House to partake of the annual dinner. After the cloth was removed, a number of toasts were offered and speeches made in connection. It was a well gotten up dinner; the toasts and the speaking made it a very pleasant occasion. As your delegate, being called upon to respond to one of the toasts, I endeavored to make myself heard, although burdened with a very sumptuous dinner.

There is one peculiarity of the annual meetings of the New England States, they have free dinners, at which all that is delicious is enjoyed, except intoxicating liquors, which are never permitted to disgrace the occasion. I will also report as delegate to the Massachusetts State Medical Society.

I am happy to say that the session of the Massachusetts Medical Society was the best that I have ever attended, except my own blessed one at home. I have attended a good many; I liked the Illinois Medical Society, but old Massachusetts has the merit, the worth, the age, they seem to grow better with age, they seem to be better qualified; they are like wine; wine you know is better for the physician's use when it is an hundred years old, and so it seems to me to be with the Massachusetts Medical Society.

I will read my report:

As your delegate, I will report that I had the pleasure of meeting with the Massachusetts State Medical Society, on its last anniversary, in the city of Boston, on the 24th of last May. After my introduction, by the president of the society, I presented to them the greetings of the New York State Medical Society, which were cordially received. I, as your delegate, was invited to take part in their discussions and deliberations. The Massachusetts Medical organization is very rich, having been made so by endowments. The treasurer's report showed the receipts for the last year, were $9,075.38. Their expenditures were $6,740.00. Dr. Sabin, of Williamstown, with appropriate remarks, presented a series of resolutions commemorative of Dr. Alden March, of Albany, a native of Massachusetts, who always sympathized with the members of their society. I expressed myself as happy that the resolutions of Dr. Sabin had been introduced: and with a full heart expressed my estimation of his great

worth as a surgeon, a man and a friend. The harmony of the meeting was somewhat marred by the introduction of a resolution to expel a homœopathist. Although the discussion was warm, no ill feeling toward each other remained among the regulars. The annual discourse was delivered at one o'clock. At its completion the retiring president introduced his successor, Dr. Samuel A. Fisk, of North Hampton. The society then adjourned to the hall, where tables had been spread for the annual dinner. After dinner a number of gentlemen addressed the society, in response to the regular toasts. Among other entertainments, was the reading of a poem, by Dr. Oliver Wendell Holmes, on Rip Van Winkle, Jr. His wit, and hits at the folly of much of the practice of medicine, in telling the story of young Rip Van Winkle, M. M., S. S., M. D., who went to sleep in the days of high doses, to wake in the palmy days of modern practice, afforded much merriment, well adapted to an after-dinner hour. The invited guests to the dinner, were made up of ministers of the gospel, doctors of the law, the mayor of the city, and commodore of the navy.

Dr. Quackenbush moved that the report of Dr. Corliss be accepted. I feel very happy in that I was on the nominating committee which sent him to this Society; still, when I see a gentleman of his age, always at the Society, and doing what he can do, and now traveling off to another State Society as delegate, I do not feel that we should simply accept his report, but we should tender him a vote of thanks for the noble manner in which he has discharged his duties. Carried unanimously.

Dr. Corliss: Rest assured that if age does not impair my health, I shall continue these efforts while I live.

Dr. Kneeland: Yesterday afternoon I voted for those resolutions offered by Dr. Squibb, I did it for the purpose of moving for a reconsideration. The paper began by stating that, whereas a paper or papers purporting to have been written by Dr. Thoms, was a plagiarism from a paper written by a London physician, by name Parkes, and claiming that the same was a verbatim and entire abstract from the London physician's paper; that an apology is due from this Society to Dr. Parkes, also censuring Dr. Thoms. I voted for that motion, and I now move for a reconsideration of the motion. Every member of this Society is supposed to be an honorable man, and I do not believe that any man ought to be tried, condemned, sentenced and executed without being heard in his own defence. If the author of that plagiarism is here, let him defend himself. If he thought the

same thoughts as Dr. Parkes, though separated by miles of ocean, is he to blame for that. Let him defend himself.

Dr. Quackenbush: I am opposed to the reconsideration of that resolution. Every gentleman in this Society is an honorable man. When Dr. Squibb rose in his place and offered that preamble and resolutions, every man was convinced by the mere fact that they were offered by him, that the charge was true. Let the matter remain as it is. Let no explanation be given until the gentleman who committed the offence asks for it.

Dr. Husted moved to refer the report to a special committee.

Dr. Kneeland: I have no doubt but that Dr. Squibb is an honorable man. The accusation is made by one honorable member against another honorable member; but, is it right to execute without hearing both the accuser and the accused?

Dr. Parker: We ought to give expression to the saying that fair play is a jewel. If Dr. Thoms had what he says he had, he has it still. I refer to the preface, in which he says he gave full credit to the different authors from whom he borrowed. I quite agree with the gentleman who offered these resolutions, that if the accused is guilty, he should be punished. But if it happened by an accident, as I hope it has, and he can clear himself, let him have a chance. If not, let him be censured.

Upon a call for a division, the motion was declared carried.

Dr. Thoms: Mr. President and gentlemen of the New York State Medical Society: Many of you know what my efforts have been. You know with what determined opposition we have to contend in New York city. You know how we have been abused; how we have been obliged to force our way to distinction in every shape and form. This paper was presented in 1868, and was intended to give you, gentlemen, all the obtainable information with reference to the subject of the "Effect of meteorological influence upon health." It was designed to call the public attention to the overcrowding of some of the lower wards of the city, and its consequent mortality. The paper was presented to you for that purpose, with the intention of arranging and putting together all that was known in regard to the meteorological effect upon health. The preface was prepared to go with that paper. If you will but look at the beginning of the paper as printed, you will see that it refers to the authorities from which it quotes. The intention was to lay before you all that was known upon the subject of meteorology, and then present the accurate facts. It gave you there the meteorological observations in other countries.

The preface, by some mishap, was not sent with the paper, and therefore was not published with it.

Dr. Wey hoped that the motion to refer to the committee on ethics would prevail.

Dr. Squibb: This preamble and resolutions were brought before the Society for their action, and whatever is done should be done by the Society's action. In the first place I disclaim any attack on Dr. Thoms. My effort is only to redeem the Society by returning our thanks to Dr. Parkes. I don't wish to throw any reflection whatever upon Dr. Thoms. The Society has heard me; why not hear Dr. Thoms? If Dr. Thoms can account for the preface to that paper, let him.

Dr. Agnew: I hold it to be a principle of this Society, never to be departed from, that the very moment that any member of the Society is arraigned, it should at once be sent to the committee on ethics: that is the appropriate committee to send it to. Let the parties appear before it, present their accusations and defense. Let the case be tried before the committee. When the committee shall report, then it is time for the Society to act in the matter.

Dr. Squibb: There has been something said about a preface to the paper; all I know is, that the preface was not published.

The motion was carried to refer to the committee on ethics.

The Secretary read the following:

HOMER, *5th February*, 1871.

As it is impossible for me to be present at the meeting of the State Medical Society, this week, I would report to them the result of my mission as delegate to the Medical Society of Ohio, at their annual meeting at Cleveland in June last.

I was received, as your delegate, by the meeting very cordially, and was much interested in their deliberations. The number present was large, and all seemed to take an interest in the discussion on subjects presented. I was not as well pleased with their manner of conducting their meeting as I always have been with the manner of doing in our Society. At my solicitation, that Society have appointed delegates to attend the annual meeting of our Society this year, one of whom, at least, will be present, Dr. Read, whose acquaintance I made at this meeting.

Respectfully yours,

GEO. W. BRADFORD.

Dr. Abraham Jacobi, of New York, offered the following:

Whereas, Humanity acknowledges the claims of every human being to life and some degree of prosperity, and recognizes, in every civilized country, the right of every new-born to be protected and supported; and,

Whereas, Political economy requires the saving of a being which has given rise to outlay until and after it can become useful and repay the expenses incurred in its full development; and,

Whereas, The moral constitution of society requires that every member of society should obtain a sufficient training of its intellectual and moral powers; and,

Whereas, The mortality of infants, being large from natural causes, is three times larger in public institutions destined for the maintaining of infants than in the general infant population; and,

Whereas, The Board of Commissioners of Charities and Correction, always willing to be guided by competent advice, and desirous of doing their best, have *already* had a report prepared for them, suggesting changes and improvements in the raising of their infants; therefore, it is

Resolved, By the State Medical Society, to appoint a committee to investigate and report, in the meeting of 1872, upon the following subjects:

1st. The causes of the fearful mortality of abandoned infants in general, and those in large public institutions in particular.

2d. The reasons for the giving up of large institutions, and the successes of the dispersing system for abandoned infants, in every country of Europe where the preservation of lives was an object.

3d. The causes of the unusually large infant mortality in the institutions in charge of either public or self-constituted authorities, in New York city and State.

4th. The plans and means for improving the condition of foundlings and abandoned children in New York city and State.

a. During their infancy, when they are most subject to disease and death.

b. During childhood and adolescence, when they require an education sufficient to make them useful members and prevent them from becoming enemies of and dangerous to society.

Adopted, and the President appointed the following committee:

Dr. Jacobi, New York; Dr. White, Buffalo; Dr. Dean, Rochester; Dr. Thomas Hun, Albany; Dr. Hutchison, Brooklyn.

Dr. Newman: I have had the honor to represent this Society in the

Connecticut State Medical Society. I take pleasure in reporting that the society met in the city of New Haven. Out of the six delegates appointed to represent this Society, three were present: Drs. Shove, Garrish and Newman. Your delegates were received with kindness, and enjoyed the hospitalities of the society. All of your delegates addressed the society; one read a paper. I may say that out of the three honorary members elected, two were from this State. While we were there, the society made a change in its regulations which is good for the future; hereafter the society will give one day to executive business, out of the two days' session; the second day will be given to the scientific part of the convention. The session of the convention closed with a sumptuous dinner, given to the members and their guests. This year the society meets at Hartford.

The report was accepted.

Dr. Oliver White, chairman of committee on by-laws, reported through the Secretary as follows:

State Medical Society of New York, Session of 1871:

The standing committee on by-laws beg leave to report, through the chairman of the committee, that during the past year, the following county medical societies have submitted their constitutions and by-laws to the committee for examination, viz.: The St. Lawrence County Medical Society, the Monroe County Medical Society, the Genesee County Medical Society, the Cattaraugus County Medical Society, and the Chautauqua County Medical Society.

O. White,
Chairman of Committee on By-Laws.

Dr. Saunders offered the following:

Whereas, Dissatisfaction has arisen from the election of permanent members of this Society that were not residents of the district entitled to their membership; therefore,

Resolved, That it is the sense of this Society that permanent members should and must in all cases be selected from such persons as are eligible residing in the district entitled to such membership.

Adopted.

Dr. Quackenbush: I move a reconsideration of the resolution, for the reason that this matter was sent once to the nominating committee and disposed of. The nominating committee placed some men to represent districts in which they did not live, and some dissatisfaction arose. What was done by the committee last year, has been done five

or six times. It was done in 1865, 1866, 1868, 1869. The late Presidents have been on that committee—Dr. Gray and Dr. Parker; the best men in our Society have been on that committee; Dr. Corliss has also been on that committee. If any district will forego the pleasure of having a man from its district to represent it, why should not this Society be entitled to it? Why, sir, the very gentlemen who complain of this infringement of their rights, have been accorded the same privilege. Dr. Sayre was sent here from another, the eighth district. There is Dr. Peter McNaughton, whom we all respect and honor, and thanks to the fifth district which sent him. Go on further. Who is the live man here? the man who does the work in this Society? Single him out, and who is he? Dr. Squibb. How came he here? The eighth district sent him. All honor to the eighth for sending him. There is no need of my going on still further. Who is the most distinguished rising man in this country? Dr. Agnew. The gallant old fifth sent him here. Now, gentlemen, the fifth district was honored by sending him. What I mean to say is this: New York has a large number of representatives. It has its Sayres, its Bozmans, its Squibbs, its Noyes, its Agnews. It don't become them to complain in this matter. Ought they not to have more representatives than the country districts? The Albany district might take its representatives from New York, and whose business is it if she does? I don't like that resolution, coming from such delegates. Another reason why this subject ought not to have great weight with us. Look at the report of the Treasurer for 1869. A little less than $400 of that amount was given by the first district; given by one district. Ought we not to consider this? Ought we not to cherish this district? Still, taking this into account, I hold that if there is any district which ought to forego its privilege in this respect, that is the first district. I might go further. I want to make some other remarks upon this subject, for I think it was intended to censure last year's nominating committee. We took a man from the fifth district as permanent member. When the committee met in session, the fifth district knocked at the door of the committee and said, "Gentlemen, this Society has the power to confer a degree upon one man every year; will you be kind enough to confer it this year upon a member from the fifth district?" To this the committee, without the least hesitation, consented. In return for that, we get such usage as this; finding fault with the committee for choosing as its representative a gentleman from another district. In relation to this matter, I hold if any district sees fit to forego its privilege of sending another than a resident

member as its representative, the Society should not object. If the delegates, in a spirit of generosity, give us such noble men as Squibb, Agnew, Sayre, let them choose them; its an honor to themselves and the Society. I should like to have some gentleman offer a resolution reconsidering this matter, and leave the committee to act as they please.

Dr. Waterbury: I have the honor to represent here the county of Delaware. I feel free to state that the Delaware County Medical Society presents a remonstrance to this policy of electing men into their rights from the cities and metropolitan districts. Generally they are not well pleased in relation to their representation in this Society. Of course it is your option whether you will pass these resolutions or not. When this order of business was called, had it not been for these resolutions, it should have been brought up in some other way. If this matter should rest as it has done, I feel assured that the whole of the country districts in the State would have felt themselves aggrieved, their rights overrun, and that they do not get what they are entitled to.

The motion was lost.

Dr. Corliss: It is said of me that I have done the very thing with which now I find fault. I yesterday intimated that I found fault with this matter. It is some years since I occupied that place. Then I did the very thing to which I now object. I desire to say, as Judge Kent once said before the supreme court. He had made a decision upon a particular point, in which he said so and so, and now he decided upon the question directly opposite. When they had opened the book and showed the judge his own doctrine, directly opposite from what he then decided, Judge Kent said, "That might have been my decision then, but what I desire to say is, Judge Kent was wrong;" and I desire to say, if the thing they said of me was true, then I was wrong.

Dr. Shumway, through the Secretary, reported as follows:

Chicago, *February* 1, 1871

To the Medical Society of the State of New York:

Having been appointed, with others, a delegate to attend the State Medical Society of Vermont, and not being able to attend your Society this winter, I report, that in conjunction with Dr. Sherman, of Ogdensburgh, I attended that society, at its semi-annual meeting at Burlington last June, and was cordially received. The meeting was thinly attended, but evinced a talent and industry so characteristic of the

Green Mountain State. Several papers were read and discussed, of great practical value, showing not only an acquaintance with the advanced state of medical science, but abounding in good common sense. Respectfully submitted.

SAM'L SHUMWAY, M. D.

The following papers were read by title and referred to the publishing committee:

Biographical Sketch of Dr. Minturn Post, of New York, by Dr. G. S. Winston, New York.

Obituary Notice of Moses C. Hasbrouck, M. D., of Nyack, by Dr. T. B. Smith, Nyack.

The Radical Cure of Inguinal Hernia, and Ligature of the Subclavian Artery for Axillary Aneurism, by Dr. C. C. F. Gay, Buffalo.

Fracture of one of the Bones of the Spinal Column, accompanied by Dislocation, with a drawing, by Dr. P. O. Williams.

Dr. Frederick Hyde read a biographical sketch of the late Alexander Thompson, M. D.

Dr. D. B. St. John Roosa, of New York, read a paper entitled "A Statistical Report of 494 Cases of Aural Disease."

Dr. C. R. Agnew, of New York, read an article on "The Operations for the Correction of Divergent Squint."

Dr. Noyes said: Perhaps it is not necessary to make any observations upon the paper of Dr. Agnew, except to say that his remarks are fully sustained by all who have operated much in these cases. When this matter is introduced, the subject expands into so large a field that we do not know where to stop. In the treatment of these cases, no man has ever had better results, as these photographs will testify, than has Dr. Agnew. While surgery is one of the essential parts of the operation, yet it is not the only one, but is simply a beginning, as there are many delicate points in the whole operation.

Dr. Squire, of Elmira, also exhibited and explained "A new flexible metallic Prostatic Catheter, or the Vertebrated Prostatic Catheter."

Dr. Hutchison: This subject is one of the most important that can engage our attention. Dr. Squire sent me one of these catheters for trial. For a number of months I did not use it. I had become satisfied with the ordinary number eight now in common use in these cases. A case where I had occasion to use this came under my care: a person who had been under the care of two or three physicians for some three years or more. As I was busy at the time, I requested my assistant, Dr. Wilson, to see the patient. He did not take this

catheter with him the first time, but used a number eight, such as had always been used, and passed the instrument into the bladder. The next time he went, he took this instrument of Dr. Squire's; the patient was delighted with the ease with which this instrument was passed. A short time after this, I was called upon to treat a similar case. Dr. Wilson also saw this case. A false passage had been made by a gentleman of large practice. A number eight catheter was passed. On the following day, one of these instruments was taken; simply by the slightest push or effort it entered the bladder. The symptoms which this patient had presented were peculiar; he had to urinate several times during the night, and frequently while dressing himself. It did not come out in a small stream, as in the ordinary stricture; in this case it came out and dropped down from the penis. This circumstance satisfied me that it was a case of enlarged prostate. The beauty of this instrument is, that the patients can pass it themselves with ease. Sir Henry Thompson says that every man over fifty-five is, or one in three is, affected with enlarged prostatic glands. From what opportunities I have had to observe, the working of this instrument of Dr. Squire's is very valuable. Another beautiful improvement by this instrument is that it will pass easily round the curve.

Dr. Squire: I have been asked how much of a strain will the chain attached to the instrument bear. It will bear a strain of twelve pounds. That is more than double the strain to which they will ever be subjected.

Dr. Wheeler: Dr. Lyle Smith, of Hudson, spoke to me, some two weeks ago, in enthusiastic terms of this instrument. In one instance a patient was troubled with this retention, and he had gone in a number of times when the gentleman was asleep, and introduced the instrument without waking him. The first time I had a chance to use the instrument was just about daylight yesterday morning, when I used it with perfect ease. I know of no instrument which can be used with such ease.

Dr. Sayre: I am quite sure that simply an inspection of this instrument is quite enough to satisfy any one as to its merit. Dr. Hutchison properly remarked that the great advantage of this instrument is the capability of self-application, making surgery easy.

Dr. Wolcott: I have used this instrument in two cases; the second case was a gentleman of about seventy years of age; he had been troubled for thirty years; he had been attended all this time by physicians. I was called to see him. I introduced the instrument, and presently I found that it met a hard substance; I was compelle

to press very hard until it gave way, and I was enabled to introduce the instrument. I asked the physicians who attended him as to the cause of this. I found no enlarged prostate glands.

Dr. Corliss: I have been in the habit of introducing the catheter for some months as a standing medicine. I always use the old number eight, and I never fail of getting water when I go for it. I recollect one time I was called in to see a patient who had been attended by a physician by the name of Hatch; he introduced the instrument, but could not get water. They sent for me, and I happened to introduce it with a great deal of ease. They said I must come and do that again. The next time I went, I got into a false passage. In his efforts, Dr. Hatch had made a false passage. After introducing the catheter the man said, "Stop, doctor; you have got into Hatch's passage." How does this new catheter go with the false passages?

Dr. Squire: If you stop using the old instrument and use this, you will have no false passages.

Dr. Sayre, of New York, in the same connection, presented a probe similarly constructed, which he had used with benefit in cases of necrosis in which the sinus was long and tortuous. He had never failed, with this instrument, to detect the presence of necrotic tissue in difficult cases.

Dr. Squibb read a paper on Anæsthesia, in which he described, among other things, his new instrument for the administration of ether unmixed with air.

Dr. Noyes: I desire to occupy the attention of the Society but a few moments, with reference to this subject. A few months ago, Dr. Squibb was kind enough to furnish one of his instruments to the eye and ear infirmary, and we have used it and it was found to work admirably. In the first place the can is out of the way of the face. This has been one of the main difficulties in the use of all other apparatus. Dr. Lent's apparatus, for general purposes, is an admirable one. You can see that if an operation is to be performed upon the eye, it is out of the way. With Dr. Squibb's apparatus, when a patient presents himself for an operation having whiskers, it is a difficult matter to dispose of them, especially if he is a noble specimen of the Teuton family, with large heavy beard, for he will never allow it to be shaved. It then becomes necessary to pass among the hair, if you cannot wind it around the neck. It becomes a difficult matter to deal with. Then, too, by this apparatus the patient is obliged to inhale and exhale into the same vessel; by this means the inhalation of ether is not complete. It became with me a practical question to contrive some-

thing which would render it useful for our purpose. I contrived to make something of this shape (exhibiting the machine), adapted to the face. It was built for the face, fitting tightly over the nose; it goes under the jaw and fits under the chin. It is flat at one end, with rubber, contrived to fit closely under the chin. This was then put in the shape as here represented, and by this means the operation could be proceeded with, without the removal of the apparatus. The vessel is in the shape of a gunpowder flask, with a top on it. Dr. Squibb's retorts are for the purpose of furnishing a large amount of ether; the patient inhales from this. The work of holding it is performed in this simple way: the patient simply, strongly drawing in the breath, holds it to its place.

Dr. Sayre inquired if they took the same pains to exclude air in the administration of chloroform as when administering ether.

Dr. Noyes: No; we should not dare to do it.

Dr. Sayre: There is where it seems to me we are wrong. I use it almost wholly in my practice. I use chloroform, and exclude air from it altogether. It is as dangerous as arsenic or strychnine, if it is not used with discretion. You can prevent anæsthesia by mixing the exhaled breath with chloroform. You can kill with chloroform. But I give chloroform with the same specific design as I do any other potent agent. You can anæsthetise anybody with less than a drachm of chloroform. A teaspoonful is enough for the largest operation I have ever had to perform. You make also, in administering these anæsthetics, a great mistake in not constructing these instruments so that when you inhale you gain the full benefit of the mixture; and when you exhale it should be allowed to escape, so that none of it should remix with the gas, but it should all be allowed to escape in the air, and then every inhalation will be of the pure gas. I drop my chloroform into the inhaler fastened to the body, let them take but a few breaths, and they drop off in the narcotic state almost immediately. Some persons have a tendency to appear poisoned under its effects; you have, of course, to give such persons the proper remedies, and they will live.

Dr. Sherman: What a great blessing this discovery has been to mankind! I first commenced with the use of ether. I used it for a long time, until I found that I did not get satisfactory effects from it; and ever since 1848, I have almost exclusively used chloroform. I have acquired a reputation quite extensive all over the county, and I am sent for to administer it to patients for forty or fifty miles around, where any serious operation is to be performed. I administer it under

all circumstances. I heartily approve of Dr. Sayre's method of administering it, so as not to allow the patient to inhale his own breath. I give chloroform myself in my own way. I am very careful as to the quantity of chloroform I administer. I will put my patient under its influence while undergoing labor pains. Two years ago a death occurred under the knife of Dr. Frank Hamilton. But these cases are exceptions. I did use ether, but lately I have used chloroform. I put half an ounce of chloroform in water. I am just as careful one time as another, for it needs care. I do not have any apparatus, except a cup and sponge. I pour the chloroform on it, holding it to the patient's nose; let the patient breathe freely, inhaling from the sponge: and when exhaling, removing the sponge away from the face, so as to allow the foul breath to escape, and thereby always having the pure article to inhale every time. I never allow this to be done by an assistant; I always do it myself, holding the sponge to the face with one hand and with the other feeling the patient's pulse. I have administered it in this manner, and have kept a patient under its influence for twenty-four hours.

Dr. Fleet Spier read his prize essay.

The Society adjourned to meet at 3 o'clock P. M.

SECOND DAY—AFTERNOON SESSION.

The Society convened at 3 P. M., agreeably to adjournment, and was called to order by the Vice-President, Dr. Dayton.

Dr. E. H. Parker said: Mr. President, learning that there are a large number of valuable papers awaiting the opportunity to be heard, I move that the usual order of business as ordered in the by-laws be suspended, and that the Society proceed to listen to those papers, in the order directed by the business committee. Carried.

Dr. Whiton announced that Dr. Thomas Addis Emmet, of New York, would read a paper on Prolapsus Uteri, its Causes and Treatment.

Dr. D. W. Jones, from Franklin, read a paper on Veratrum Viride.

A question being asked as to how many drops were used, or what was the dose, Dr. Jones answered by saying he usually gave from six to ten drops in squills, which was enough generally to produce nausea: generally ordering the attendant to diminish the dose, after nausea had commenced.

Dr. Hutchison read the following:

The committee to whom was referred that portion of the President's inaugural address which relates to the publication in medical

journals, before they have appeared in the Transactions, of papers which have been read before this Society, beg leave to recommend:

1st. That the second sentence in paragraph six, chapter third of the by-laws (see page 70 of the Transactions of 1869) be replaced by the following: *The author of any paper read before the Society may have the privilege of publishing the same in any legitimate medical publication, unless objected to by a vote of the Society; and any paper presented to the Society by title may be published by the author, unless objected to by the committee on publication.*

2d. That the words "or which has already appeared in any book or journal," in the third sentence of paragraph six, chapter third, be striken out of the by-law.

JO. C. HUTCHISON, *Chairman.*
J. G. ORTON.

Accepted and adopted.

Dr. Dean reported as follows:

The committee on ethics, to whom was referred the case of Dr. Thoms, whose case was brought before this Society by resolution yesterday, after hearing the statements of Dr. Thoms, recommend that he be permitted to make a statement of facts before the Society, from which more satisfactory results may be obtained than by definite action of this committee.

In relation to the difficulties connected with the Niagara County Medical Society, the committee respectfully report, that after examining all the facts brought to its knowledge, its action is embarrassed by the existence of questions in the solution of which no precedent appears, in the history of county medical societies in this State, to guide its action. For a score of years or more, the testimony elicited shows that the Niagara County Medical Society has comprised elements that should have placed it beyond the fellowship of this Society. A large number of its members have been in constant and open violation of not only the spirit of our constitution, but also the express rules of order and professional conduct enjoined by this Society.

The committee finds that for two or three years past a minority membership of the society has made laudable efforts to correct the evil alluded to, but that any question tending to the discipline of its members could not be entertained, by reason of the majority influence against such action. A minority membership, alleging its inability to effect such reformation among its members as to make effective the code of ethics governing this Society, did, at a semi-annual meeting

of the Niagara County Medical Society, held in January last, by resolution, dissolve said society and organize a new society.

The committee is of opinion that a county medical society in this State is not competent to the work of its own dissolution, but very respectfully submit the question to the State Medical Society. At the same time the committee desires to express the hope that the seceding portion of the Niagara County Medical Society may be advised to such action as will secure to them the privileges and relationships of the most rigidly governed medical societies.

If the committee rightly estimates the privileges and liberties of county medical societies, the resources of the minority membership of the Niagara County Medical Society are to the statutes of the State now existing, or to special legislation.

J. G. ORTON,
A. F. DOOLITTLE,
H. W. DEAN,
Committee.

On motion of Dr. Parker, the recommendations of the committee were taken up separately.

Dr. Parker thought it no more than a matter of simple justice toward Dr. Thoms to allow him to explain this matter. We have heard one side of the controversy, now let us hear the other.

Dr. Thoms was allowed to explain.

Dr. Thoms: With reference to the Transactions of 1867, you will see by referring to them, that when at the time the paper was presented to the Society, all the proper credit was given at the commencement of the paper to the parties from whom afterward the extracts were made. (The Dr. here read from the paper.) In the preparation of the paper referred to by Dr. Squibb, I should say that it was first presented to the county society, and the proper credit given for extracts which it contained. Then it was brought here, and my only purpose was to obtain all the information upon the subject and collect it together, on the subject of meteorological observations regarding health. I collected the materials together, and condensed them into as small a compass as possible, so that we might be in possession of the best authority upon this subject, to call the attention of the public to the consequent mortality in some of the overpopulated wards in our city. I brought the paper here at the time, by the solicitation of friends who were interested in the subject. I brought it here and put it into the hands of the publication committee. The paper, at the time it was

presented and read, was not complete. I had not had time myself to complete it, as my health soon after became so impaired that I was obliged to relinquish it, and was not able to continue the subject to the extent I had wished when I commenced the collection. By some mistake the preface, which had been prepared to accompany the document, was not sent. I am willing to make all proper reparation that I can in the matter, for certainly no injury was intended to any one. I may state also that just after this paper was presented to this Society, my mind was carried into another channel, to the preparation of diagrams showing the influence of stifled air in the more overcrowded wards of the metropolitan districts. For these reasons and ever since I commenced the preparation of these charts, I have hardly given the subject any attention. If any apology I can make will repair the injury, I am willing to make it, as it was simply an oversight in not sending the preface along with the paper to the publication committee, so that with the paper it might appear in the Transactions.

Dr. Bates: In the light of this statement of the case, I see no other way, and I move that Dr. Thoms be acquitted of the charge contained in the preamble and resolutions of Dr. Squibb, which motion was amended by inserting the acceptance of the explanation.

Dr. Rochester: I should like to ask Dr. Thoms a question, which can be answered easily. Was or was not the preface prepared by him sent to the publication committee?

Dr. Thoms: It was not.

Dr. Kneeland asked if the preface spoken of had ever been brought to or forwarded to the publication committee. The Society is undoubtedly willing to accept the explanation of Dr. Thoms, but it seems to me that we should be stultifying ourselves if we should dispose of the matter in this way. It seems to me, in this disposition of the matter, we inculpate Dr. Squibb, as it is through him that these charges are made. Let the record of the Society be kept pure, no matter upon what member rests the responsibility of having impaired it.

Dr. Squibb: If I understand this matter rightly, by accepting the explanation of Dr. Thoms, the Society will have placed me in the position of having made false charges against one of its members. If the explanation of Dr. Thoms is received, and the motion of Dr. Bates prevails, it certainly places me in the position of having brought a false accusation against Dr. Thoms. I cannot look at the matter in any other light.

Dr. Wey: I think Dr. Squibb is mistaken in looking at the matter

in that light. We all know who Dr. Squibb is. When he does any thing of this sort, it is done conscientiously, for the good of the Society. The charge was made against Dr. Thoms. We have allowed him to make an explanation. In the light of these facts the charges were true, and the explanation of Dr. Thoms is simply to satisfy us as to the truth or falsity of the charges. The accusation was made in a spirit of justice to the Society, and the explanation is for the purpose of putting the member accused fairly upon the record. I think also by this action the paper of Dr. Squibb is virtually withdrawn. It seems to me that the paper is so drawn that if this explanation is received it will simply (in the light of the paper) be giving the member the benefit of the explanation, and be relieving Dr. Thoms of the suspicion of these charges. But it does not seem to me necessarily to implicate Dr. Squibb of having made false accusations against Dr. Thoms.

Dr. Sayre: It seems to me that the only way we should do is to allow Dr. Thoms to put in the Transactions, over his own signature, a note referring to the paper read at that time, and giving credit for the passages quoted. This seems to me to be the only way that the Society can place itself in this matter before the world with a clean record. Dr. Thoms does not deny that that paper contains extracts from Dr. Parkes' paper: therefore I say let Dr. Thoms put into the reports the preface of which he has spoken.

The Secretary said that the publication committee had never seen the preface spoken of, and this is the first time they had known anything about it.

Dr. Kneeland: It seems to me that the action we should take in regard to this matter ought to be, to practically destroy those resolutions. Dr. Squibb has done his duty in bringing it before the Society, and if we as a Society take action upon it, as we must in order to preserve our honor, we should take such action as should destroy those resolutions.

Dr. Parker: I move the substitution of the preamble and resolutions, as the voice of the Society.

Dr. Hart: I do not intend to say much upon this subject, but what I shall say will be to the point of preserving our honor as a Society and our position before the world. We are regarded as a Society of honorable men, and we so regard ourselves. We are an association of scientific men, and we do not wish to copy the views and observations of any other scientific men without giving credit for them. We wish to have it understood by the world that we are an organization composed of honorable men, scientific men. There are physicians all

over the world continually engaged in making discoveries in science. Their researches suggest experiments and observations, which are published for the benefit of mankind. Gentlemen of this Society and other societies are constantly making discoveries in the profession, to which we wish to give the widest publicity. And it seems to me, if we don't adopt this preamble and resolutions, and let the explanation appear side by side in the same Transactions, we cannot place ourselves justly and honestly before the world in this matter.

Dr. Govan: I move a reconsideration of the question. I have not the slightest idea of censuring Dr. Squibb, whose reputation as a man and a physician is as dear to me as my own.

Dr. Wolcott: I move that Dr. Thoms be required to say, in the Transactions, that the paper read before the Society, 1867, was a paper published in "Parkes' Manual of Practical Hygiene," by Dr. Parkes, of London.

The Secretary thought that we should make some distinctions in this matter, because it is very likely that Dr. Parkes would not wish to have all the credit for all the matter that appears in that paper.

Dr. Roosa: It seems to me that we should take some notice of this matter in the light of that preface. If Dr. Thoms has made no reference in the preface he has spoken about, that he has made such and such quotations from such and such authorities, then surely we should hold him responsible and he is guilty of plagiarism, and he stands accused by his own admission of the offense charged. But if he admits in the preface that in the preparation of that paper he has used Dr. Parkes' paper, then certainly the accusation is false, and he stands acquitted of the charge. But we do not know whether the preface contains this or not, and what is more, we do not know whether there is any such preface in existence. The preface was not sent to the county medical society; they have not seen it. It was not brought with the paper to this Society; the publication committee have not seen it. No one has ever seen it, and we have no evidence that there is such a thing in existence.

Dr. E. R. Smith: What are we going to do to place ourselves right before the world in this matter? It seems to me that the first step has been taken to that end. We have adopted the resolutions, which certainly shows our anxiety to place ourselves, in a matter of this kind, right before the people. We do not wish to have a hand in shielding any member of the Society from an accusation of this character, if it can be substantiated and proved. The second step should be to give

credit in this paper or publicly to Dr. Parkes, if the extracts were his. I think we should take some action in this direction.

Dr. Parker: In order that the matter may appear properly before us, I call for the reading of the preamble and resolutions.

The Secretary then read the same.

Dr. Parker: I move to amend Dr. Govan's motion by substituting this preamble and resolutions.

Dr. Govan accepted the amendment.

Dr. Roosa again inquired of Dr. Thoms whether he did or did not, in that preface, mention that in the preparation of that paper, copious extracts had been made from Dr. Parkes' paper, or did he only say that he availed himself of the language of Dr. Parkes.

Dr. Thoms: I can only state now, as I have stated before, that the preparation of this paper was intended to embody all the obtainable information upon this subject. And the preface, as it was originally prepared, gave credit to the gentlemen from whose papers citations were made. The paper was published in the Transactions, not accompanied by the prepared preface. At the time when the paper was presented to the publication committee, I requested to withdraw it, as I did not think it complete enough for publication, but the committee objected, and would not let it go. In the preface, credit was given to the gentlemen from whose papers citations were made.

Dr. Wyckoff: Has Dr. Thoms the preface with him?

Dr. Thoms: I am willing to apologize to the Society for anything I may have done amiss in this matter. The paper was not originally intended for publication. I prepared it simply to convey to my own mind all the obtainable scientific investigations that had been made on the subject.

Dr. Didama: I should like to ask Dr. Thoms whether he has seen the Transactions of 1868; and if he has, why has he been willing ever since to allow these Transactions to contain that paper, without any mention having been made since, that proper credit was not given to certain parties from whom quotations were made?

Dr. Quackenbush: It seems to me that all that can be asked of Dr. Thoms is that he shall make a full apology. There, with him, the responsibility of this matter rests. That is one thing. But it is still another thing that this Society should place itself right before the world; and it seems to me that this can only be done by adopting the resolutions of Dr. Squibb. We all know that the object of Dr. Squibb in bringing those resolutions here was not for the purpose of accusing Dr. Thoms of plagiarism, but for the purpose of placing this

Society honestly before the world. What Dr. Squibb has done we all know to be right. It is due to the Society and to Dr. Squibb that the resolutions as they came from him should be adopted. This should be done, if for no other reason than as a matter of simple justice to ourselves, to our honor and our character as a Society.

The President then said: The motion is upon the adoption of the preamble and resolutions offered by Dr. Squibb.

Dr. Noyes: I think we are getting befogged in this matter. These resolutions of Dr. Squibb were presented and adopted yesterday, and we are now discussing the question of receiving the explanation of Dr. Thoms. I feel somewhat of an interest in this matter. I am and have for some time been acquainted with Dr. Thoms. I should very much like, if consistent with our reputation, our honor and our character as a Society, that he should be cleared and acquitted of this charge. But, rather than that the reputation of the Society should suffer by it, and he is guilty of the plagiarism charged, then let him be held responsible, and no one would shrink less from passing a vote of censure upon him than I.

Dr. Sayre: When Dr. Squibb presented his resolutions, they were adopted unanimously by the Society; and the motion now before us is, that the explanation of Dr. Thoms be considered satisfactory.

Dr. Smith: It seems to me that it will be an easy matter to embody both the resolutions and the explanation in the same transactions.

Dr. Sayre: I move that the explanation of Dr. Thoms be entered upon the minutes.

Dr. Hutchison: It seems to me that the Society will be stultifying itself by putting that upon record. If he did, in the preparation of that paper, use the paper and language of Dr. Parkes, without giving credit for it, and he is sorry for it, it is very well; but the Society will stultify itself by allowing that explanation to go upon the records, and I think we ought not to do it.

Dr. Sayre: Let Dr. Thoms have the benefit of the best explanation or defense he can make; and if Dr. Parkes should ever see it, I am sure he would be satisfied. It is very likely that Dr. Parkes knows nothing about it and will never know anything about it.

Dr. Quackenbush: I hope that resolution or motion will be withdrawn. This whole matter has become part and parcel of our proceedings; as such they will appear in the Transactions; but why require this explanation to be placed in the minutes?

The motion was withdrawn, and the preamble and resolutions of Dr. Squibb were readopted.

By recommendation of the business committee, that part of the report of the committee on ethics relating to the Niagara County Medical Society was taken up and final action taken upon the same.

Dr. Dean, the chairman, then read that part of the report, remarking that the Niagara County Society was ruled by a majority of members who were not willing to allow any of the rules recommended by this Society to become their rules as to the admission of members. There are members who constantly break over the rules and regulations recommended by this Society and adopted by other county societies—men who are considered quacks and charlatans in their profession; and all efforts of the minority to have such rules adopted as shall expel these members, or compel these men to give up their business, are futile. The minority seem to be powerless in the matter, and therefore, as a *dernier resort*, dissolved the old society and organized a new one, and are proceeding according to the regulations of other societies in the State. The committee finds no precedent to recommend to these members as to the action they should take in this matter. It seems to me that their only resource is to abandon it and organize a new society, or to obtain a special legislative enactment abolishing the old one, and organize a new one.

Dr. Clark, of Niagara: Gentlemen of the Society, I stand before you as a delegate from the society which you have properly censured. For societies, like men, sometimes need severe discipline. Some of the members of the Niagara County Society are worthy members of the profession; men of skill, men of science, men who are an honor to the profession. We have also men among us who bear diplomas from reputable and respectable colleges of the land, but yet they are men who do not shrink from hanging out their signs from store windows as venders of quack medicines, soaps, etc.; they are also in the habit of publishing slurs and slanders against each other's character. They advertise their wares publicly, and have even gone so far as to pay for publishing such pieces in the papers. As has been stated, we have resolved to disband the old society. A new society held its first meeting on the 3d day of last June. The minority of the society have acted in good faith. They have been powerless to move in this matter. When anything was attempted to be done which was calculated to place the society upon a more respectable basis, as regards themselves and their connection with other societies, it was voted down. We knew that we were not proceeding according to the code of ethics recommended by this Society, and the

only way that we saw of purging ourselves of these quacks and charlatans was to dissolve the old society. Now all we expect this Society to do is to indorse our action, and recommend us to go before the Legislature and obtain a special act disbanding the old society. I have said we have been powerless to take any action in this matter. An attempt was made, a few months ago, to correct a member of the society who had been charged with producing an abortion upon his own wife. The facts in the case were not only positive and convincing, but the man was convicted out of the mouth of his own wife, who died from the effects of the operation, as to when, where and how he did it. As plain as were the facts in this case, he was acquitted, not only in the society, but in the police court, where the case was tried, after a coroner's jury had investigated the case. Let me say, right here, that that same police justice which acquitted this man has been implicated in and proven to have received certain sums of money from parties for allowing prisoners to escape. When these charges were made, and the member brought before our society, they refused to hear the complaint of a brother physician, and voted it down. We have members among us who have committed lesser crimes than this. We have had no precedent to guide us as to what action we should take in the matter. We have not been able to purify ourselves, and we should like to know what redress we can have, and what power this Society has in the case.

Dr. Kendall: I know nothing of the merits or demerits of the question at issue, but I ask unanimous consent to allow a gentleman at my right, who knows something about this case, Dr. Hurdwell, to make a statement.

Dr. Palmer, of Buffalo; I would state that the gentleman is not even a practicing physician. He is not a medical man; he is a druggist, and hangs out just such signs as has been spoken of. He is interested, of course, in his own business, just as any man would be; but still I do not think that he is a fit representative to communicate with this Society on that subject.

Dr Kendall: I am thankful that I was made a man before I was made a doctor. Let us hear the man, if we do not the doctor.

Dr. Cook moved that the gentleman be heard.

Motion lost.

Dr. Chamberlain: I do not think that we have the time to spare upon this Niagara County Society subject.

On motion of Dr. Wey, the whole subject was recommitted to the committee on ethics.

Dr. Peters, of Cohoes, read a paper on "Spinal Irritation."

The Society adjourned to meet at the same place at 8 o'clock in the evening; also at 9 o'clock in the morning.

SECOND DAY—EVENING SESSION.

The Society convened at 8 P. M., when the President, Dr. S. Oakley Vander Poel, gave a very interesting, elaborate and learned address upon the Different Relations of Pathology to the Study and Progress of Medicine. It was listened to with marked attention by a large and appreciative audience.

The Society then adjourned to the residence of Dr. Vander Poel, to enjoy the hospitalities to which they had been previously invited.

THIRD DAY—MORNING SESSION.

The Society met at 9 A. M., and after being called to order by the President, Dr. S. Oakley Vander Poel, prayer was offered by Rev. Mr. John Peddie.

On motion, the regular order of business was dispensed with, for the purpose of presenting some of the papers left over from the last session.

Dr. E. R. Hun read a paper on "Glosso Pharyngeal Paralysis."

Dr. Jacobi asked if there was anything in the history of the case of that man that would lead to any hypertrophy of the connecting tissue.

Dr. Hun said there was not.

Dr. Jacobi: In the large majority of cases it seems that the tendency of the tissue is to soften, rather than harden. The cases of hardening of the tissue are rare, and yet, when we look closely at them, we find that they are the result of small local hemorrhage. We have to deal with this disintegration of the cells, because of the nonformation of tissue in and around the liver. We may, it is true, consider and treat it as a form of inflammation, but we know that syphilis in early life leads to such disorganization. It would be well to examine the case in this light, and see if syphilis existed in early life. The usual forms in which syphilis is found are not in the way in which this case is reported. Sometimes the patient suffers for years with a partial paralysis of the tongue, before he is aware of this disease. There may not have been a primary disease to have produced this result. This is as rare a case as is to be found. In some cases of paralysis, the hypertrophy will travel to the brain and thence downward. In this case it is the same process of the so-called idiosyncrasy.

in which there is the same form of inflammation of the brain as the doctor has described. Here the upper and lower portions of the brain and spine were hardened.

On motion, Dr. Richardson, of the Philadelphia Hospital, was invited to read a paper on the "Diagnosis of Early Pulmonary Phthisis by the Microscope."

Dr. Richardson responded by reading his article.

Dr. Sayre: We owe Dr. Richardson a debt of gratitude for the able and interesting paper to which we have listened. It has been really instructive to me; more so, perhaps, because I am not in the habit of using the microscope much, and therefore am not so well acquainted with it. I move that a vote of thanks be tendered to Dr. Richardson for the interesting and able paper read here to-day.

Dr. Corliss: I am highly gratified with the paper read by Dr. Richardson, although I have not been able to hear all the remarks made by him with distinctness. I am a great admirer of microscopy, as it is a subject which lies near my heart. Mr. President, I think he is entitled to more than a vote of thanks. You can strangle a cat to death with thanks, as perhaps some of the gentlemen know. I think very highly of the subject, as it is one in which I have taken a great deal of trouble, lately, to learn and understand, and one which I think and hope will be more fully known. A few months since I saw the need of microscopic observations, and I went and bought a microscope. Though I am old, I do not want to be behind the age in which I live. The microscope is going to be a great instrument in our profession; an instrument by which, in the future, we are to make progress, and rapid progress, in the science and art of medicine; and I am for taking advantage of all the appliances which will be of any benefit to the profession.

Dr. Husted: I move an amendment to the motion of Dr. Sayre; that the paper read by Dr. Richardson appear in the Transactions, in connection with the report of the prize essay committee. Carried.

Dr. Peters, of Cohoes, entertained the Society by a case of insanity: This patient was first attended by Dr. Chauncey Bouton, now a retired physician living in Waterford. During its first stages we consulted together; after consultation it was decided or concluded that it might be a case of congestion of the membrane of the brain, and we concluded to practice venesection, which was done by opening the veins and leaving them open until syncope was produced. The result was in

every way favorable. After the first trial, the patient remained in a state of sanity for a few days at a time. After each successive trial, the period of sanity was lengthened, was extended until it covered three weeks, when aberration occurred, and the young lady again became wholly insane. Dr. Bouton was called, and practiced venesection again until syncope was produced, which had the effect of enabling the patient to return to a state of sanity. This was performed every four, five or six times a month, the same operation being performed every time and always with the same favorable results. This was continued as long as Dr. Bouton continued to practice his profession; the intervals of sanity in each case continuing to lengthen, so that the period came to be two, three and four months. You may imagine the frequency of bleeding in this case. I may say also that insanity in this case was hereditary, as one sister had been affected with the same disease, and also a grandparent, so that the nature of the case was pretty clear. By this method of proceeding it was found that three or four bowls full of blood were extracted from the veins in one operation; the bowls were filled one, two and three times; sometimes it was more and sometimes less; it continued until syncope was produced. Brandy and such other stimulants were used to resuscitate her; and this was continued until she answered correctly any question which was asked her. I do not suppose that in every case, this kind of treatment would be required. This treatment in this case was kept up by Dr. Bouton so long as he continued to practice, when the patient fell into my hands; and I have, ever since, practiced the same operation; not that some other procedure might do, but that this had always been successful. I practiced it as a physician would, because such favorable results were obtained; and I take it that success in our practice and profession is what we are after. When the patient fell into my hands, the period of sanity had become extended to four or five months. The lady is now some fifty years old, and about three years ago I bled her the last time, and she has remained perfectly sane from that time to this. I don't know what practice of this nature, in every case, might lead to, but I have an impression that some cases of insanity might be relieved in this way. There are those here who are better able to judge of this than I. The statements contained in this case can be vouched for, and there is abundant evidence of the proof of the facts.

Dr. Sayre asked: What was the respiratory condition of the patient during the operation?

Dr. Peters said: The respirations were always regular. The lady

in temperament was of an hysterical character; but, as I have said, it was hereditary, as both a grandparent and a sister had been affected by the same disease.

Dr. Hawley was allowed a few moments to exhibit an article called pepsin.

Dr. Sherman: I should do injustice to myself and certainly to Dr. Hawley, if I did not give the Society the benefit of the operation of the article of Dr. Hawley. This preparation was first presented to our notice at the Society's meeting last year. Immediately after my return home, I sent to Dr. Hawley for samples of his article, and he returned them to me. I have ever since used these preparations, and in every case with the most favorable results. I removed into the country, and then returned to the city. On my return, an old and faithful house servant came to me, to be treated for dyspepsia. I prescribed for her, giving her a certain amount of this preparation; the effect was almost immediate, and she wanted to know what I had given her, as she felt such a relief from it as she had not felt in a number of years before. She said it made her feel so comfortable; she had not felt so in years before. If you use it, you will be satisfied that it is all that it is recommended to be.

Dr. Jacobi: As Dr. Hawley has referred to me, I may say I have used his pepsin for the last year, and I may also say that for certain purposes I have used it exclusively, and it is all that it is said to be. I know that cases have been cited where this article has failed to relieve; let me say, that I believe that these cases are all of them cases in which it was expected that these preparations would do what they could not be expected to do. It will not always do to give it in every case of gastric disease. It is intended only for special cases; and its effect, where it has been used with discretion, has not failed in any instance.

Report of the committee on psychology was then read:

To the Medical Society of the State of New York:

The committee on that part of the President's inaugural address which refers to psychology beg leave to report as follows:

That they commend the practical carrying out of the views of the President on the importance and imperative necessity of the investigation not only into morbid conditions found in the insane, but as well into those pathological states capable of ultimating in insanity.

The importance of this cannot be overestimated, and it is alike the

duty of the general practitioner as well as those having charge of hospitals for the insane, to make the most careful clinical observations in every case coming under their care, with the same scrutiny that is demanded and conceded in every form of neuroses.

It is true, in the present state of psychological science for the general practitioner, that the data for observation are defective, but it has been equally true as applied to every new field of medical research.

The foundation of psychological science must be laid in pathological facts; and these can only be obtained by large experience. Therefore, to clinical observations must be added *post mortem* examinations.

To accomplish these results most efficiently, it is absolutely necessary that students of medicine should include, in their study of nervous diseases, insanity as well as other cerebral affections.

The committee therefore recommend the passage of the following resolutions:

Resolved, That this Society earnestly approves the views and recommendations of the President, in making the study of insanity a necessary and inseparable part of the study and teaching of the neuroses. Thorough instruction can only be accomplished by the means of clinical and didactic instruction, and that this step is alike due from every medical school to the student of medicine at the present time, as well as to medical science itself.

Resolved, That every medical college be requested to carry these suggestions into practical application; and that the Secretary of the State Medical Society be directed to transmit a copy of these resolutions to the several medical colleges of the State.

JOHN P. GRAY.
JAMES L. BANKS.

Accepted and adopted.

Dr. Sherman presented the following report:

Mr. President.—As a delegate from this Society to the Vermont State Medical Society, I have the honor to report that I attended the semi-annual meeting of said State medical society, held at Burlington, on the 7th and 8th of June last, in company with Dr. Shumway. As representatives of New York State Medical Society, we were cordially welcomed, and invited to take part in the proceedings. The meeting was very small, and your delegates were surprised and pained to see not one resident physician of Burlington present the first day; the reason assigned was that they did not know the

meeting was to be held at that time and place. There were several very interesting, able and practical papers read and fully discussed; the members present (chiefly from the extreme parts of the State) evincing the right spirit of progress and improvement.

Respectfully submitted.

B. F. Sherman.

Dr. Squibb reported as delegate to the United States Decennial Convention for the purpose of revising the Pharmacopœia of the profession in the United States. All the delegation sent by this Society were present during the session of the convention, and I am sorry to say that the representatives of this Society were the only representatives of any State medical society in the convention. There were representatives from other medical organizations, and from other colleges and hospitals, for they realize the necessity of understanding thoroughly the Materia Medica. The professors of our colleges do not forget, do not overlook any and all opportunities for improvements on the doctrines taught in the schools. Though there were representatives from some of the colleges, there was none there from the colleges of New York city, and no State organization, which exists as a State society, was represented except our own. There were there the delegates from the Maine Medical Association. The association in Maine is really their State medical society. There was a sparse representation at the convention. The convention accomplished the object for which it convened, and the committee of final revision was appointed. That committee is in session at the present time in the city of Philadelphia. Dr. Smith, my fellow delegate, was appointed on that committee, though really his name, with many of the others, will simply appear in the proceedings as a member of the committee of final revision. The committee consists of many more members than it ever did before, but it is understood that the burden of the work will fall upon the five members residing in Philadelphia. They compose the committee of revision proper. It is understood that the business of the committee is left with them wholly to do.

Dr. D. P. Wood is chairman. The work to be done is very onerous, and it will not be very easy for the committee to complete their labors, and we shall not probably have a report from them short of three years. They are composed of men engaged in various other avocations, and it is not expected that they will give their whole time and attention to the work before them, and it will be sometime before the work of the committee will be published. I desire to make

one point, and one of which we ought to be proud, that is, this was the only State medical society represented in the convention, out of all the medical societies in the States. I should like to have the report accepted, and then I should like to offer at the proper time a preamble and resolutions, containing some recommendations of interest upon the subject.

The report was accepted.

Dr. Wolff presented the following:

Mr. President.—Having had the honor of being elected your delegate to the Vermont State Medical Society, I attended the annual meeting at Montpelier. A most cordial reception was extended to me as your delegate. There were about eighty members present. A number of interesting papers were read. The members of the Vermont Medical Society send you cordial greeting.

Respectfully,

ARTHUR S. WOLFF.

To the Medical Society of the State of New York:

The committee appointed at the last meeting of the Medical Society of the State of New York, to report to the American Medical Association respecting "The Nomenclature of Diseases, drawn up by a joint committee appointed by the Royal College of Physicians of London," with a view to its adoption by the physicians and surgeons of the United States, prepared and sent to the American Medical Association the following communication.

To the American Medical Association:

At a meeting of the Medical Society of the State of New York in February last, the undersigned were appointed a committee to report to the American Medical Association respecting "The Nomenclature of Diseases, drawn up by a joint committee appointed by the Royal college of Physicians of London," with a view to its adoption by the physicians and surgeons of the United States. This nomenclature was published in London in 1869, after many years of labor by eminent scholars, and having been reprinted and generally examined by the medical profession in this country, any critical or explanatory remarks are unnecessary. It should be understood, however, that the work is not considered finished, but the reader is informed upon the title-page that, like our pharmacopœia, it is "subject to decennial revision."

The committee offer the following recommendations:

1. That the medical profession adopt this nomenclature as far as is practicable.

2. That the American Medical Association appoint a committee of three to present additions and modifications to the committee who have in charge the first decennial revision.

3. The committee would also recommend, that in future editions, the signs, to show the pronunciation of words, should be used in the index, in order to have an authoritative standard in this particular.

All of which is respectfully submitted.

(Signed) Austin Flint, Sr.
Alfred Underhill.
Ellsworth Eliot.

The above communication was referred to a committee appointed under the following resolution, which was adopted by the association:

Resolved, That the American Medical Association be requested to appoint a committee to prepare a nomenclature of diseases, which, on approval by the association, shall be submitted to the medical practitioners of the United States for adoption and observance.

Respectfully submitted by the committee as above.

New York, *Feb.* 7, 1871.

Report was accepted.

Dr. Eliot further remarked, I wish to present a preamble and resolution, which are intended to urge the Legislature to pass a bill now pending before it, to secure physicians in the payment of costs and damages, in suits for malpractice, by compelling the plaintiff to give bonds before commencing action:

Whereas, The bill before the Legislature to secure physicians in the payment of costs and damages, in suits for malpractice, by compelling the plaintiff to give satisfactory bonds before the commencement of any suit, is one of the highest interest to every physician: therefore,

Resolved, That this Society respectfully requests the Honorable Legislature to pass the same. Adopted.

Dr. Dean, from the Committee on Ethics, presented the following, which was unanimously adopted:

Whereas, An action for alleged malpractice was recently brought against Lewis A. Sayre, M. D., of the city of New York, a permanent member of this society, in which he was maliciously and falsely accused, and which resulted in a triumphant vindication of his professional skill, by an award of damages in his favor; and,

Whereas, By fearlessly meeting this groundless prosecution, in resisting all attempts at proposed compromise, and by vigorously forcing this scandalous suit to a trial, he secured a judicial decision, which established a legal principle of great value to the whole medical profession, and which has been justly characterized as "one of the greatest advances in jurisprudence during half a century," and will do much to prevent malicious attacks upon medical men;

Resolved, That, in the opinion of this society, the services rendered our common profession by Dr. L. A. Sayre, by his successful effort to protect its honor and interest, merits a distinct recognition, and a unanimous vote of thanks is hereby tendered to him.

Resolved, That the above preamble and resolutions be entered on the minutes of this society, and that a copy of the same, signed by the President and Secretary, be given to Dr. Sayre.

Dr. John G. Adams was appointed to prepare and read a biographical sketch of Dr. Alexander H. Stevens.

Dr. Squibb: It is well known that some parts of the Materia Medica have so accumulated as to render legislative action upon the subject almost necessary. In the judgment of a great many on the subject under consideration, it is necessary to take some measures by which the number of officers in the State for this purpose will be increased, without increasing the State tax, and so that the advantage will redound to the medical profession at large. To accomplish this object I have prepared a short preamble and resolutions.

Whereas, The Medical Society of the State of New York is informed of two measures that have been or will be brought before the honorable Legislature of New York, during the present session, for the purpose of protecting the people of the State against the rapidly increasing number of disasters which occur from incompetent and careless pharmacy; and

Whereas, The interests of this Society and of the people are the same upon this subject, because the utility of the profession which this Society represents to the people at large depends very much upon the quality of the medicines with which it is supplied and the competency with which these are prepared for application. One of the measures proposed for protection is the appointment of a board of examiners, to test the qualifications of those who shall be allowed to dispense medicines. The other is to supply means to assist a chartered institution to extend its design for educating pharmaceutists. All legislative bodies in this country show a strong indisposition to interfere with free trade, even in so vital a matter as medicine; and the

practical effect of this indisposition, in this State, at this time, is that any person may control the issues of human life and death as a doctor; or, as a pharmaceutist, may buy, recommend and sell the most deadly medicines, without adequate knowledge of them and without control. In deference to this policy of the Legislature of this State, whether the policy be wise or not, this Society earnestly recommends that the educational policy, long established in the common school system of the State, be extended to pharmacy, by offering to students of that art a more extended means of acquiring competency. The plan would be to supply liberal adequate means for acquiring education in pharmacy, with due notice that after a reasonable time, penal law would establish a standard of qualification and enforce a reasonable responsibility for careless and ignorant acts. There is one chartered college of pharmacy in this State, which has struggled along for many years through poverty and adversity, almost unsupported by either law or popular favor, whose object has always been to do that for which legislation is now popularly demanded. Properly enlarged and supported, this institution might be sufficient for the present wants of the State; at least so far as to try the value, in practical operation, of the educational plan, long since indorsed by the Legislature in the charter of the college. This New York College of Pharmacy is now or will be petitioners to the Legislature, during its present session, for pecuniary aid to enable it to extend and better carry out its educational purposes. Therefore, be it

Resolved, That this Society deprecates any action on the part of the Legislature, whereby any new offices or inspectorships may be created, at least until other more reasonable means be tried; first, because examinations and inspections can neither educate persons nor otherwise secure competency; and second, because experience has shown, in other States and countries, that such plans are very partial in their effects, very apt to degenerate into abuses, and that their ultimate expense to communities is greatly out of proportion to the good obtained in the result.

Resolved, That the Medical Society of the State of New York heartily indorses the objects of the New York College of Pharmacy, as set forth in the accompanying petition of its board of trustees, and desires that the petition may be granted.

Resolved, That a copy of this preamble and resolutions, authenticated by the signatures of the President and Secretary of the Society, be transmitted to the Senate and Assembly, through the presiding officers of these bodies.

I will also read the petition that will probably be presented to the Legislature.

NEW YORK, *January*, 1871.

We, the undersigned, trustees and members of the College of Pharmacy of the city of New York, do hereby most respectfully petition the honorable the Legislature of the State of New York for aid to enable the trustees of said college to extend its labors in advancing pharmaceutical science. We most respectfully submit herewith a few points to the kind consideration of your honorable body.

The College of Pharmacy of the city of New York was incorporated April 25, 1831, for the purpose of cultivating, improving and making known a knowledge of pharmacy, its collateral branches of science, and the best modes of preparing medicines and their compounds, and of giving instruction in the same by public lectures. Since the commencement of its labors, the college has granted about one hundred and fifty diplomas, and has furnished about two hundred lectures each season. There are only six colleges of pharmacy in the United States, this college being the only one in the State of New York; and young men desirous of obtaining its diploma, on applying to a committee of the college expressly appointed for that purpose, are aided in obtaining positions in first class pharmaceutical establishments, so that even persons from the remotest part of the State may reap its benefits.

The annual income of this college, from all sources, depends almost entirely on voluntary contributions by the pharmaceutical fraternity, and has, so far, only been sufficient to supply defective apparatus, to pay the lecturers, and to make fragmentary additions to its collections, without enabling it to increase the latter to such an extent as the recent rapid strides in science demand.

At present, it is imperatively necessary to increase the number of, and to more adequately compensate the lecturers (who are the only persons receiving salary from the college), to procure collections of standard botanical, mineralogical and chemical specimens, to obtain a large lecture room with a chemical and pharmaceutical laboratory, and to make numerous additions to the library; for the procurement of all of which the funds of the college are totally insufficient.

In view of these wants, and since it is all important that persons devoting themselves to pharmacy should have the proper scientific education in order to be qualified for their responsible position, and to enable the college to combat ignorance and incompetency which

endanger the health and often the lives of the people, your petitioners most respectfully ask the honorable the Legislature of the State of New York for aid, in the sum of ten thousand dollars, to assist in carrying out the above mentioned designs of the college. Such a public acknowledgment will most certainly be in many ways a benefit not only to the city of New York, but to the State at large.

Confidently relying on the justice of our humble request, and on the wisdom of your honorable body, your petitioners will ever pray.

After a full discussion, the mover withdrew the preamble and resolutions, because of insufficient time to consider so important a subject.

Dr. Parker presented the following:

Resolved, That the Secretary be instructed to have three hundred extra copies of the proceedings of each annual meeting printed in a separate form, and ready for distribution at the next succeeding annual meeting, for the use of the members present. Carried.

Dr. Wheeler offered the following:

Resolved, That the Medical Society of the State of New York recommend the passage of a law requiring previous vaccination as a condition of admission of pupils to the public schools of the State, and that the President appoint a committee of three members to present the subject to the consideration of the Legislature.

The resolutions were adopted.

Dr. Sayre offered the following:

Resolved, That each county society in this State be requested to appoint a committee of registration, whose duty shall be to prepare and preserve a complete list of its past and present members, and to forward annually, on or before the first of March, a list of the names, post-office addresses and office hours of all regular physicians in the county to the editor of the "Medical Register of New York," as recommended by the President in his address. Carried.

Dr. Govan: How are we to know who are and who are not regular practicing physicians? Suppose there are regular practicing physicians who are not members of a county society.

Dr. Sayre: The constitution provides that no one shall be considered a regularly practicing physician unless he is a member of a county society.

On motion the resolutions were adopted.

Dr. Lansing offered the following resolution:

Resolved, That the publication committee be authorized to employ an experienced proof reader in the preparation of the next volume of

the Transactions of this Society, at an expense not to exceed dollars.

In explanation of this resolution, Mr. President, I would state that even the most casual reader of our Transactions, for past years, cannot fail to have noticed with regret the numerous typographical errors that burden their pages. These volumes are supposed to represent the culture and the science of the medical profession of this State. They are disseminated far and wide, among the members of other societies in this and foreign countries, and next to the value of the articles they contain should be the accuracy with which they are presented.

In proof of the need of some such measure as I suggest, I refer to the volume for 1869, since this is the last one distributed, and is a fair sample of the others. On the very first page of the address of the President of that year occurs the following monstrous typographical blunder. It is printed, "Shakespeare has told us—

> "'Tis vastly wise to talk with our past hours,
> And ask them what report they bore to heaven,
> And how they might have borne more cheerful news."

In his gross blundering substitution of the name of Shakespeare for that of Dr. Young, the printer would seem to have convicted the President of ignorance of the authorship of this common quotation.

Again, Mr. President, on the second page of this address I find a sentence reading as follows: "And I affirm with confidence that in human affairs there is no profession nobler than ours; none which has an older growth; none which has engaged," etc., etc. I find quotation marks before the words "human affairs," but I look in vain to find where that extract ends. It would be impossible for any member of this Society to say how far it extends, or how much of this and the succeeding page is made up of extracts, unless like me he had before him a copy of an excellent address delivered by the late Dr. Pomfret before the Albany Medical College in 1868.

Now, of course, we exonerate the President from any charge similar to the one he urged but yesterday so zealously against another member of this Society, and only wish to show how the failure of the printer to fix the proper quotation marks down these pages might have left him open to be treated in a similar way.

Again, Mr. President, at the conclusion of this address, after urging the members of this Society to take "Excelsior" for their motto, the author says: "Excelsior, then, let it be—higher and higher still, though the fossils of our profession (and they are few) would urge you

not to dare the heights of our science—higher and higher still, though the *maidens* in our profession would invite you to cease from your exhausting toil," etc.

Now we all know the author of that address as too gallant a man to fling any such insinuation against that interesting class who have gained, or who are so nobly seeking to gain, an equal place in our profession. The word "maidens" must, therefore, represent here another typographical blunder.

In passing now from this to other portions of the volume, I find, on page 105, "Scrapa's space" printed for "Scarpa's space;" on page 158, "gastrocnymius muscles" for "gastrocnemii muscles." On page 192 the word "hemiotomy" for "herniotomy," and the same thing repeated on page 198. On page 195 I read as follows: "In abnormal cases of labor, I am frequently called, such as require *torsion* or the forceps." In the manuscript, most probably, the word "version" would be found, instead of "torsion." On page 197 the words "meteria medica" occur twice.

These examples, and doubtless others might be gathered from the volume, are in explanation of the resolution I offer; and in offering it, Mr. President, I desire expressly to disclaim any intention of reflecting on the members of the publication committee. It is properly the business of that committee to decide upon and arrange for publication the articles and papers committed to it, and it is too much to ask of any member of that committee to spare from his other duties the time necessary for the proper reading and correcting of these proofs.

I, for one, Mr. President, desire to see the forthcoming volume, enriched as it will be by so many able and interesting papers, an accurately printed volume. To this end, it seems to me, the services of an experienced proof reader might be secured, at an expense not much over fifty or sixty dollars.

Dr. Sayre: Would Dr. Lansing be willing to undertake the job for so small a sum. Three times that amount would not induce a competent proof reader to undertake it.

Dr. Lansing: I do not profess to be an experienced proof reader, but I think the services of some person like Dr. Shrady for instance, familiar with the editing and publishing of medical matter, might be secured for the purpose.

Dr. Mosher regretted that this subject had been introduced. If it meant anything, it was not simply for the appointment of a "proof reader," but, as the remarks accompanying it would indicate, the reso-

lution was only a cover for a personal attack upon the author of a paper published in the Transactions. It is unfortunate for the author of the resolution that a similar one offered by him some years since, in this Society, was unanimously laid on the table, for the reason that it was only offered to gratify personal ends, as was charged by the member who moved so to dispose of it. The matter of correcting typographical errors is desirable, though they may occur in the most carefully corrected books. I remember hearing it stated by Dr. Sprague, one of the most exact of authors, that he had been surprised at finding them in books where the utmost care had been taken to prevent it. But here we find that the "proof reader," as he is called, is to see that we have corrected our spelling, grammar, literature, etcetera, as well as typography. For my part, I have never found, and I think the gentlemen who are present at this somewhat remarkable discussion, have similar experience in not finding such a variety of blunders in our articles, probably because we read them for their scientific value, which is what I think they are published for. Moreover, I fear that none of our publications would appear well, if subjected to the kind of criticism that has just been made, and none of us would permit a proof-reader or any other person to make the corrections or take the liberty to change our papers, as is suggested in this movement. To consider this resolution for a moment upon its merits, and gravely to suppose that the mover, if it intended that an appointment should be made of a person capable of supplying the literary defects of the members, besides making the other corrections enumerated, I must agree with Dr. Sayre, and think that the sum of fifty dollars is a ridiculously small price to pay for the service.

Dr. Lansing: I scorn the imputation made by Dr. Mosher as to my motives in offering this resolution. Once before, as he says, I brought this subject to the attention of the Society. It was in regard to the volume of transactions of the year Dr. Bissell was President. He, too, felt aggrieved at the bungling manner in which his address was printed, and members were mortified at the numerous typographical errors the volume contained. It was sought then, as now, to defeat my resolution, by imputing to it a personal motive. As I said before, I have no intention at all of reflecting in this matter upon the publication committee. These blunders speak for themselves, and all I wish is simply to call the attention of the Society to them, and then if members prefer the Transactions should appear marred with imper-

fections, such as I have been pointing out, I feel I have done my duty, and will let the thing pass.

Dr. Quackenbush: Having occupied so much of the valuable time of this Society, my sense of propriety might induce me to refrain from replying to the covert attack of the mover of this resolution, but methinks I would be derelict in duty did I allow his unjust and uncalled for censure of our Transactions to go forth to the public uncontradicted and unrebuked. With the expression of regret, but evident feeling of satisfaction, he alludes to "the numerous typographical errors which burden these pages." Sir, it illy becomes an officer of this Society thus publicly and unjustly to speak of our Transactions. These volumes, published by the liberality of our great State, are an honor to the State, and with pride all generous and loyal physicians point to them, and think they are surpassed by none in this country, and are equal to any in the world. But, sir, having paid his addresses to the Transactions in general, he very cautiously and *perhaps* reluctantly, alludes to the address of our President in 1869, and lest the Society should be ignorant of the gentleman to whom he refers, I would, in passing, state that the person is Dr. J. V. P. Quackenbush; and, Mr. President, in referring to this article in our transactions, he speaks of "the monstrous typographical blunder" of attributing the authorship of a very beautiful and appropriate quotation to Shakespeare instead of Dr. Young, and then accuses the printer of this mistake. When I introduced the quotation I supposed Shakespeare was the author, but my memory was at fault, and *I* made the mistake, and the gentleman *knew* that I was wrong and not the printer, and hence when he attacks the printer I am compelled to notice it in proper though severe terms, and vindicate the printer from an accusation which the mover of the resolution *knew* to be destitute of the truth, and therefore unworthy of him. But, Mr. President, whether the quotation was a day-dream of Will Shakespeare, or a night thought of Dr. Young, it was very appropriate, and should be even considered by all, and by none can it be more frequently and profitably pondered over than by the gentleman who has seen fit to make it the subject of his remarks. The next monstrous typographical blunder to which Dr. Lansing pleasantly alludes, is one where half a sentence is quoted, and the quotation marks are properly placed at the commencement, but are inadvertently omitted, either by myself or the printer, at the conclusion. Dr. Lansing says: "It would be impossible for any member of the Society to say how far the extract extends." This can be no serious disadvantage to him, for as it was

taken from what he styles the "excellent address of the late Dr. Pomfret," it would enable him to perceive beauties which otherwise he might perhaps fail to discover. The last mentioned "typographical blunder" to which the mover of the resolution refers is no blunder at all, for the printer printed just what I wrote, and I wrote just what I intended to write; and if the gentleman cannot appreciate it, it is his misfortune, not my fault. Having advised the Society to take Excelsior for its motto, I used the following language: "higher and higher still, though the maidens in our profession would invite you to cease from your exhausting toil," etc.

And now, Mr. President, Dr. Lansing informs the Society that I am a gallant man (I wish I could give the Society the same information in relation to him), and being such, the mention of the word "maidens" must be "another typographical blunder." Not at all, sir; not at all. When I wrote that I had in my mind the beautiful poem of Longfellow, "Excelsior;" and wishing to give the peroration of my address a poetical rather than a prosy character, I made reference to it; and instead of speaking of the "old man" and the "maid,' I made mention of the "fossils" and the "maidens;" and I regret that the gentleman who could so readily rectify the mistake of quoting a remote foreign author, should be so blind as not to see my reference to our own Longfellow. But, Mr. President, if I was ever doubtful about there being "maidens" in our profession, I am now perfectly clear on this point. Sometimes these "old professional maids" are grumblers. There were grumblers in olden times, there are grumblers now. We have little boys who are grumblers, we have larger boys who are the same. Come back a few years with me into the "past," and walking down in old "South Market street," see that company of boys, as with eager eyes and joyous countenances they watch the old stage sleigh as the horses come dashing along in the wintry morn; and now as it passes by, see these boys as they strive to find a place in the projecting boot, and as one more fortunate than the rest gains the sleigh, hear that cry as it issues from their little jealous throats: Cut behind! cut behind! Mr. President, the days of the old stage sleigh have passed away, and this peculiar sport of the little fellows is gone; but the spirit of grumbling still remains; and the older grumbler seizes his opportunity, and now, instead of hearing the crepitant rattle as it issues from their little throats—cut behind! cut behind! we hear the gutteral sound as it comes up from the cavernous depths—cut behind—cut be-h-i-n-d!

Dr. Squibb: As this matter is getting to be personal, I move that the whole subject be laid on the table. Carried.

Dr. Govan, from the Committee on Credentials, reported that there were forty-two counties of the State represented in the Society this year.

Dr. E. H. Parker remarked as follows: Mr. President: While partaking of your generous hospitality last evening, I was informed that an article respecting Dr. March had appeared in the morning Argus, from the pen of Dr. James McNaughton, and that it contained some personal allusions. Although I had read the morning paper, I did not observe the article, but this morning I procured a copy and read it, and besides, I have seen the same article scattered about this hall, published in distinct form. I only wish to call attention to one paragraph, in which the author says: "The treatment of his disease has been the subject of ungenerous and unjust criticism in some of the medical journals and elsewhere, by persons who knew little of the case, but took that opportunity to vent their spleen, forgetting that by so doing they were lacerating the feelings of the family of the deceased. It was a matter of regret, if not of surprise, that an ex-president of the State Medical Society of New York, and an ex-chairman of the committee on medical ethics of the American Medical Association, should volunteer to express their approbation, and in no courteous terms either, at such an unseemly and ill-timed a course. But beyond hurting the feelings of the relatives of the deceased, nobody else has been hurt but the assailants. It is to be hoped in their sober second thoughts they will see the error of their ways." I suppose I am the ex-president of this Society referred to. I don't know who was the ex-chairman of the committee of the American Medical Association, on medical ethics. ["I am the other fellow!" said Prof. L. A. Sayre, humorously.] Well, says Dr. McNaughton, somebody has been hurt, I don't know who it is. I have not been hurt, have you been hurt, Dr. Sayre? I have only to say that I wrote a letter to Dr. Robertson concerning his criticism of the treatment of Dr. March, which he requested permission to make public use of. As I am not in the habit of saying in private what I'm not willing to avow in public, if called on, I requested a return of the letter, which had been hastily written, to see if it required any verbal or grammatical correction, and then sent it to Dr. Robertson to make such use of as he saw fit. I was glad not only in this case, but I am always glad to see an exposure whenever an attempt is made to conceal a false diagnosis by a false pathology.

Dr. Sayre here moved to lay the matter on the table, which was done.

Dr. Ward presented the following:

The Medical Society of the State of New York, desirous of expressing its interest in, and appreciation of, the work of the microscopical department of the United States Army Medical Museum,

Resolved, That the investigations of this department, particularly in the study of healthy and diseased human tissues, by means of high powers of the microscope, and of photo-micrography, and the dissemination of results, by means of photography, have materially added, and still promise to add, to the world's knowledge of health and disease, and to the world's facilities for relieving disease and averting death;

Resolved, That for a long time to come, at least, these results would not be attained without the opportunities furnished at the Army Medical Museum;

Resolved, That the wise liberality of the government in carrying on this work, is heartily appreciated by the medical profession, and should be gratefully remembered by the citizens of this country;

Resolved, That copies of these resolutions be sent to the Surgeon-General of the United States, and to Dr. J. J. Woodward, of the United States Army Medical Museum, at Washington.

R. H. WARD.
EDWARD R. HUN.

Unanimously adopted.

Dr. Wey, chairman of the business committee, read the following by title, to be referred to the publication committee.

Annual Address before the Albany County Medical Society, by Dr. Wm. H. Craig, president; and, by vote of the society, sent to the State Medical Society.

Absorption of Bone; a case by Dr. Isaac N. Mead.

Constitution of Man, by Prof. Charles B. Coventry. An Address before the Oneida County Medical Society, and by vote of that society sent to the State Medical Society.

Inoculation with Tuberculous Matter, by Dr. L. Barton.

A case of Congenital Hypertrophy of the Tongue, by Wm. Vosburgh.

A paper on Contagion, by Prof. Jacob S. Mosher.

A case of Ovariotomy, by Prof. J. V. P. Quackenbush., also a case of Inversion of the Uterus by the same.

A case of Biliary Calculi, by Dr. Milton R. Hasbrouck.

On One of the Modes of Death from Chloroform, by Dr. Andrew H. Smith, and, A few observations on the effects of morphia on the mental faculties when hypodermically used.

Dr. Loughran from the committee on nominations read the following report:

The committee on nominations unanimously submit to the Society the following report:

For President—Dr. WILLIAM C. WEY, of Elmira.
For Vice-Pres't—Dr. ANDREW F. DOOLITTLE of Herkimer.
For Secretary—Dr. WILLIAM H. BAILEY, of Albany.
For Treasurer—Dr. CHARLES H. PORTER, of Albany.

For Censors.

Southern District	Drs.	Edward R. Squibb, Brooklyn.
		Samuel T. Hubbard, New York.
		N. C. Husted, New York.
Eastern District	Drs.	B. P. Staats, Albany.
		P. McNaughton, Albany.
		C. C. Covell, Kingston.
Middle District.....	Drs.	M. M. Bagg, Utica.
		Horace Lathrop, Cooperstown.
		Charles G. Bacon, Fulton, Oswego Co.
Western District.....	Drs.	J. F. Miner, Buffalo.
		C. C. Wyckoff, Buffalo.
		D. Colvin, Clyde.

For Committee on Correspondence.

First District	Dr.	George F. Shrady, New York.
Second District.....	"	Abram Crispell, Rondout.
Third District	"	Henry B. Whiton, Troy.
Fourth District.....	"	R. L. Allen, Saratoga.
Fifth District.....	"	W. S. Bassett, Mount Vernon.
Sixth District	"	J. G. Orton, Binghamton.
Seventh District	"	H. N. Eastman, Geneva.
Eighth District	"	J. F. Miner, Buffalo.

For Permanent Members.

First District.....	Drs.	Thomas Addis Emmett, New York.
		S. Fleet Speir, Brooklyn.

Second District ..... Drs. J. S. Lamoree, Sullivan.
R. Loughran, Ulster.
Third District ..... Drs. George H. Hubbard, Lansingburgh.
Nelson Fanning, Catskill.
Fourth District ..... Drs. Hiram McNutt, Warren.
B. F. Sherman, Ogdensburg.
Fifth District..... Drs. Frank S. Lowe, Oswego.
Walter Booth, Booneville.
Sixth District ..... Drs. L. Griffin, Binghamton.
S. F. McFarland, Oxford.
Seventh District..... Drs. Nathan R. Tefft, Onondaga Hill.
James W. Wilkie, Auburn.
Eighth District..... Drs. William Van Pelt, Erie County.
R. C. Reynolds, Rochester.

ELIGIBLE FOR PERMANENT MEMBERS.

First District..... Drs. G. S. Winston, New York.
D. B. St. John Roosa, New York.
A. E. M. Purdy, New York.
Second District ..... Dr. Thomas Hammond, Dutchess.
Third District..... Drs. Matthew H. Benton, Troy.
Francis H. Parmele, Greenbush.
Charles L. Hubbell, Troy.
Edward W. Carmichael, Sandlake.
John P. Whitbeck, West Troy.
E. Whittlesy, Greene.
Fourth District ..... Drs. Moses H. Colby, Dean's Corners.
Newton H. Ballou, Mechanicsville.
Alfred J. Long, Whitehall.
Fifth District..... Dr. H. G. P. Spencer, Watertown.
Sixth District ..... Drs. William Bassett, Binghamton.
T. H. Squire, Elmira.
F. M. Perrine, Lyonsville.
Seventh District ..... Dr. Roger W. Pease, Syracuse.
Eighth District ..... Drs. Simon T. Clark, Lockport.
C. N. Palmer, Niagara.

HONORARY MEMBERS.

Drs. William H. Byford, of Chicago, Ill.; Edwin M. Snow, of Providence, R. I.; Wilmer Worthington, of Westchester, Pa.; Wm.

McCullom, of Woodstock, Vt.; John H. Webb, of Galveston, Texas; E. K. Hunt, of Hartford, Conn.

Eligible for Election for Honorary Members.

Drs. Greenville and Dowell, of Galveston, Texas; John J. H. Love, of Montclair, N. J.; M. Nelaton, of Paris, France; Rudolph Virchow, of Berlin.

For Honorary Degree of Doctor of Medicine.

Dr. Erunder Odell, of Otsego county.

Delegates to the American Medical Association.

Drs. E. S. F. Arnold, of Westchester; C. V. Barnett, of Greene; R. Loughran, of Ulster; Jacob G. Snell, of Amsterdam, Mont.; G. S. Winston, of N. Y.; A. Underhill, of N. Y.; L. A. Sayre, of N. Y.; Samuel G. Woolcott, of Utica; Edwin Hutchinson, of Utica; E. H. Parker, of Poughkeepsie; Horace Lathrop, of Otsego; G. A. Dayton, of Otsego; E. Krackowitzer, of N. Y.; E. L. Beadle, of Poughkeepsie; Henry D. Didama, of Syracuse; H. C. Hendrick, of Cortland; Nelson Nivison, of Schuyler; H. K. Bellows, of Norwich; E. R. Hun, of Albany; Levi Moore, of Albany; James P. White, of Buffalo; A. N. Bell, of Brooklyn; A. J. Long, of Whitehall.

Delegates to the Massachusetts Medical Society.

Drs. Oliver White, of New York; J. O. Van Hoevenburgh, of Ulster; E. R. Hun, of Albany; John P. Gray, of Utica; J. C. Hutchison, of Brooklyn; Wm. Govan, of Stony Point; A. T. Douglas, of Rondout.

Delegates to the Connecticut Medical Society.

Drs. Robert Newman, of New York; Hiram Corliss, of Washington; H. D. Bulkley, of New York; Francis Burdick, of Johnstown; J. Linsley, of New York; C. C. Covel, of Stamford, Delaware.

Delegates to the New Jersey Medical Society.

Drs. Ferris Jacobs, of Delhi; John R. Van Kleeck, of New York; C. C. Covel, of Delaware.

DELEGATES TO THE NEW HAMPSHIRE MEDICAL SOCIETY.

Drs. James V. Kendall, of Onondaga; M. R. Holbrook, of Poughkeepsie; L. B. Smith, of Rockland.

DELEGATES TO THE VERMONT MEDICAL SOCIETY.

Drs. T. Burton, of Montgomery; John P. Sharer, of Herkimer; Francis S. Lowe, of Oswego.

DELEGATES TO THE PENNSYLVANIA MEDICAL SOCIETY.

Drs. Marcus M. Wood, of Chenango county; E. W. Bottom, of Wayne county; H. S. Chubbuck, of Elmira.

DELEGATES TO THE OHIO MEDICAL SOCIETY.

Drs. A. Crispell, of Rondout; Gurdon Buck, of New York; Jacob Hunt, of Utica.

DELEGATES TO THE MAINE MEDICAL SOCIETY.

Drs. S. Barrett, of Genesee; O. M. Allaben, of Delaware; A. D. Hull, of Lansingburgh; E. S. F. Arnold, of Yonkers.

DELEGATES TO THE RHODE ISLAND MEDICAL SOCIETY.

Drs. A. C. Hull, of Ulster; J. L. Banks, of New York; Samuel Hart, of Kings.

DELEGATES TO THE ILLINOIS STATE MEDICAL SOCIETY.

Drs. Devillo White, of Sherburne; Geo. F. Shrady, of New York; J. C. Hutchison, of Kings.

COMMITTEE ON STATISTICS.

1st District, Dr. Ellsworth Eliot, of New York; 2d District, Dr. Geo. J. Fisher, of Sing Sing; 3d District, Dr. Chas. H. Porter, of Albany; 4th District, Dr. Alex. M. Vedder, of Schenectady; 5th District, Dr. E. Odell, of Otsego; 6th District, Dr. John G. Orton, Chairman, of Binghamton; 7th District, Dr. Nelson Nivison, of Schuyler county; 8th District, Dr. L. B. Cotes, of Batavia.

COMMITTEE ON PRIZE ESSAYS.

Drs. Thomas F. Rochester, of Buffalo; Henry W. Dean, of Rochester; Sanford Eastman, of Buffalo.

Committee on Publication.

Drs. Thomas Hun, of Albany; J. V. P. Quackenbush, of Albany; W. H. Bailey, of Albany.

Committee on By-laws.

Drs. Oliver White, of New York; Thomas Hun, of Albany; W. H. Bailey, of Albany.

Respectfully submitted.

JOHN G. ADAMS *Chairman.*

R. Loughran, *Secretary.*

Report was accepted.

After some discussion regarding the manner of balloting, the President read the by-law making it necessary to elect the President, Vice-President, Secretary and Treasurer separately by ballot. The Society proceeded accordingly, and elected those put in nomination by the committee.

Dr. Orton said: I wish before the remainder of the officers are elected to call the attention of the Society to a matter to which it has been called before. In the report of the committee Dr. Halsey is put down to represent the sixth district, Dr. Halsey does not live in the sixth but in the fifth district. And we have decided that representatives shall live in the districts which they represent, and as Dr. L. Griffin is the only eligible representative in the district, I move that the report of the committee be amended by substituting the name of Dr. Griffin in place of Dr. Halsey, as a representative of the sixth district. It was carried.

On motion the remainder of the report was adopted.

Final Report of Committee on Medical Ethics, Adopted February, 1871.

"In relation to the difficulty connected with the Niagara County Medical Society, the Committee would report that, in their judgment, the only proper course left for the medical profession of that county, is to call a special meeting of the "Niagara County Medical Society," for the purpose of adopting a new set of by-laws, agreeable to the Code of Medical Ethics of the State Society and of the American Medical Association. A copy of the by-laws thus adopted should then be presented to Dr. Oliver White, chairman of the State committee on by-laws, and, if approved by him, shall be signed by those desiring

to become members, and subject to its restrictions, discipline and privileges."

J. G. ORTON, *Chairman.*

Accepted and adopted.

On motion the Society adjourned at half past eleven o'clock, to meet in Albany, on the first Tuesday in February, 1872.

WM. H. BAILEY,

Secretary.

ARTICLE II.

Pathological Anatomy: The Necessity for its Study, and its Influence upon Medicine as a Positive Science. Anniversary Address delivered before the Medical Society of the State of New York, at its Sixty-sixth Annual Meeting, by S. OAKLEY VANDERPOEL, A. M., M. D., President of the Society

Gentlemen of the Society:

In addressing you this evening, I make no apology for stepping somewhat aside from the beaten track, in the selection of my theme. From the fact that the audience is not wholly composed of medical men, it has been customary to select a subject somewhat popular in its character and general in its application. I confess, however, that neither my reading nor tastes fit me for such an effort, and I shall rather ask your attention to a subject bearing in an intimate manner upon our every day duties; influencing in just so much as it is carefully studied, our train of professional thought, and consequently our action with reference to the character and treatment of disease. Not that I shall be indifferent to the interest, and even attention of those whose studies are not strictly such as pertain to medicine; for in all the natural sciences there is a close bond of union, an intermingling of sympathies in thought, which renders any arbitrary line of demarcation impossible; and though I speak to-night of a theme, at first mention wholly unattractive, perhaps repulsive, to all save those whose interest has been instructed, still it will be found to involve practical considerations, and demand the aid of scientific formulæ as intricate perhaps as any other branch of physical science.

Your attention then is invited to considerations upon the necessity of the culture of pathological anatomy; its relations to the daily workings of the physician; the influence its cultivation has exercised upon the progress of medicine, and how far its present knowledge advances our appreciation of the intimate workings of disease in the economy.

I am led to this topic from the fact that the general profession are far too indifferent to its *practical* study. Content to receive the *ipse dixit* of general text-books, or special treatises upon particular organs, or recalling the necessarily imperfect demonstrations made during the students curriculum, they pass through life indifferent to, or unmindful of, the rich stores of practical information constantly thrown within

their reach. Ever studying disease patiently and assiduously during its active processes, they stop short of verifying the third, and most important element of the syllogism, the *proof* of the correctness of their labors.

Shall I speak what I know to be true, that there are scores of able, laborious physicians; men whose acute perception, careful observation, and intimate knowledge of disease entitle them to worthy confidence; who yet pass their lives in this almost empiric course, rarely witnessing or making a post mortem for the purpose of verifying a diagnosis, and roused only from this indifference when some startling occasion calls for the verification of doubts and suppositions?

Daily will they listen to the taunts of the want of positivism in medicine as a science; daily will the uncertainties of their own practice evoke the self-reproaches of conscience; and yet the golden opportunities of solving a doubt, confirming a fear or establishing a truth, pass indifferently from their grasp. If each did but labor for himself in this field, if nature were but systematically and carefully interpreted, too many a boasted diagnosis would prove fallacious, and many hidden ailments be revealed, which imperfect examination, or blind prejudice in preconceived ideas, had clouded from the mental vision. These things are said in no uncharitable spirit. For while recognizing what are conceived to be the deficiencies of the profession at large in this respect, I am by no means unmindful of the obstacles and difficulties which *apparently* surround the practical workings of this branch of study. I say apparent, for I so conceive them chiefly to be, and that the earnest spirit, the faithful interpreter, can dissipate them all, and in the end really be aided by what at first seemed his chief hindrances.

In the larger centers of population, the stimulus arising from the contact of inquiring minds has of late years given a vast impetus to the study of pathological anatomy. Special organizations are created for this purpose, and the interchange of observations, the exhibition of specimens add to the general fund of knowledge. The facilities, too, of gaining autopsies are far greater than in sparsely settled districts.

Indeed, I know the remark now rises instinctively to the lips of every physician engaged in country practice, that he has neither the *time* nor the *opportunity* to pursue this study.

I know full well the difficulties and prejudices which surround him, since earliest memories recall the fatigues, anxieties, and wearisome journeyings which are the heritage of the country doctor. Though years have sped, the untiring labors of a venerated *father*, who, for over

thirty years, responded to every call of sickness and distress, is, though softened, still vivid to the recollection. Our boyhood was initiated into the mysteries of compounding drugs, of venesection, and dentistry; and our introduction to professional labor, with the exhilaration and beauties of a country life, realized also the long pilgrimages by night, the buffetings with winds and storms, the slow progress through the deepening mud or drifted snow.

I too have sat by the bright blaze of the large old fire-place, and listened with childish wonder to the simple legends, mingled with much of superstition and awe, which pass from the old to the young, and know the dread and innate antipathy existing toward everything which seems to desecrate the remains of the dead. And yet with the difficulties arising from exhausting labor on the one hand and superstition on the other, we contend the country practitioner allows to pass too easily from his grasp the opportunities for pathological research. The rich fields which present themselves to his experience lie too often ungarnered and neglected. Fatigue should be forgotten in the zest for research, and prejudice overcome in the earnest claim that death, to the true student in his profession, but opens the portals to those mysterious labyrinths where disease with its protean workings is ever weaving deadly meshes, but where too, by reflected light, he may learn either how calamity may be averted, or at least, procrastinated to the future.

Indifference manifested by the physician to the study of pathological anatomy operates most unfavorably upon the young men commencing the study of medicine. Much as is said of natural gifts and predilections, I am of those who firmly believe most of our tastes and habits are *acquired*. Very few, I think, pursue the study of any department of natural science from mere intuitive impulse, but rather as the result of some direct attention to the special subject, by which the curiosity, or it may be the thirst for further knowledge is stimulated. Subjects which at first sight are repugnant, may if properly approached, and the zeal awakened, become of special and absorbing interest. This is in a peculiar manner true of morbid anatomy. There is in the experience of every beginner in medicine an instinctive repugnance, which meets him at the very threshold of his pathological studies. From early childhood he is taught to consider death, and the ever recurring mystery which the transition, occasions, with awe. He looks at the body only in its decomposing elements; he feels that the necessary dissections are a violation of respect to the memory of the dead. Added to this is the natural dis-

inclination to handle rapidly decomposing substances, or those from which arise fœtid emanations; he has too, the healthy fear impressed upon him to avoid the sæptic poisoning which arises from the absorption of decomposing fluids; and yet it is at this early stage of his studies that the taste for researches of this kind must be acquired, and the habits of exactitude and minute research established. Indeed, if the preceptor is to give special prominence to one branch of medical study rather than another, it should be that of pathological anatomy. In anatomy and physiology his admiration is ever active at the wonderful mechanism and harmony of parts, the ceaseless activity of function, the vital unity which pervades the whole. And even in sickness when function or harmony is interrupted, his attention is readily occupied by the restoring agencies which the skill of the physician applies. In pathological anatomy, however, he has none of these stimuli. Like the study of the classics in the youthful curriculum, it is approached with a feeling of dread; like them, the subsequent love of their study is an acquired taste; and like too the classics, in being the foundation of solid and thorough education and discipline, so pathological anatomy, in the personal study of each physician, must be the basis from which to explain the morbid phenomena each day's experience presents. I throw then, primarily, the responsibility of acquiring the taste and knowledge of pathological anatomy upon the preceptor

The great majority of young men commence the study of medicine away from the centres of medical education. A primary discipline, thus acquired, need not be and is not time necessarily lost. The student acquires habits of patient toil and study; of self-reliance and personal observation. Even in the quiet walks of his country home he may from time to time have opportunities of practical demonstration, far superior to those which can be offered in any medical school.

I claim then that the study of pathological anatomy should begin with the commencement of the student's medical course. Even though he is not familiar with the normal appearance and condition of organs and tissues, still the two are always found in juxtaposition; for rarely is a whole organ or tissue diseased; and he insensibly acquires that first education of the senses of sight and touch, far more valuable and enduring than the most minute and elaborate description. What would be thought of one commencing the occupation of machinist, who contented himself with reading and studying all that pertained to the theoretical ideas of motion and force,

and yet never made himself practically acquainted with the construction of a machine, or the repair of one which was disabled? And yet we ask our young men to commence the study of the workings of the most delicate of all machinery, its harmonies and irregularities, without the slightest practical experience of how the different parts look or feel, or are related the one to the other. Would you delay this study until the student attends the lectures of some medical school? I answer, such delay is most unfortunate. With the best acknowledged facilities for its study, pathological anatomy can be but imperfectly imparted. How little definite impression is left upon the mind, when to a class of from 100 to 400 a pathological specimen is presented, and it may be, carefully described, yet how few are sufficiently near to profit materially? No, pathological anatomy, like normal, must be studied individually in the quiet of comparative retirement, and the student must make himself practically familiar by sight, by touch, by microscopic research, with the metamorphosis of tissue or the destruction of organs. Rather the study of pathological anatomy at the medical school than none at all; but better far its study under the personal supervision of the instructor.

At this point it may be claimed my position is defective, for there should be a more definite expression as to what is considered the province and limit of this branch of study. Briefly, then, pathological anatomy takes cognizance of all alterations in the economy, whether they are the cause or effect of disease. It should tell us which are the elements in organs that are attacked, what transformations of form, volume, consistence, or composition they undergo. Even here its province does not cease. By comparing a large number of similar lesions of different degrees, we have presented the complete cycle of morbid transformations, in taking each organ in a condition of health and following out all the alterations of which it is susceptible, even to the extreme phase, and then the return to a normal state, if such return be possible. At the same time it should indicate what changes are permanent after the cure.

Under this aspect pathological anatomy is allied to pathological physiology by the same relations that anatomy is to physiology. As anatomy studies the different parts of the body in a state of repose and physiology the action of organs, so does pathological anatomy study the cadaver or the resultant of disease, and pathological physiology the manner in which the diseased portions performed their functions, or in other words shows us how the lesions are allied to each other, and how they trouble the normal functions of organs.

With a province and duty so broad it would seem that the necessity for its cultivation would be universally recognized. Yet there always have been and still are ardent adversaries, minds which cannot bind themselves to study realities, which cannot permit facts to present any obstacles to their speculative abstractions. As ultra vitalists they see nothing but morbid function, and take no cognizance of the suffering organ; or again they seek to depreciate it, in alleging that it establishes only effects or results of disease. While this is often true, yet have not these very effects their importance? And from these lesions carefully studied in their different states, may we not deduce the successive phases of the malady? Sometimes indeed, determine the origin and nature? And does it not become often possible so to explain the symptoms, and draw from them practical deductions for diagnosis and treatment? Yes, it is not too much to affirm that half a century of studies in pathological anatomy has made greater progress in medicine, than ten, fifteen centuries of speculation upon the nature of diseases, considered at one time as atonic, and at another as excess of action. I affirm that without its study there is no possible verification of opinion, no means of rectifying one which is erroneous. It constitutes the surest foundation of experience, in confirming the physician in his appreciations, if they are justified; or in correcting, if the results show him in the wrong. To-day, the most obscure affections are those in which the anatomical lesions are least known, or even completely ignored.

Without the aid of morbid anatomy joined to clinical observation, what would be our diagnosis of a great number of diseases? Percussion and auscultation would not be recognized, or at least the phenomena, obtained by these important aids of diagnosis, would be only doubtful signs; the same as oppression, pain, cough, etc. The simple recital of some of the principal lesions, the history of which has thus been established, may not be profitless. How, without it, could simple bronchitis be distinguished from tubercular? It teaches to recognize cancer from chronic ulcer of the stomach, having, as they do, many analogies in symptoms, the one of which is, however, often curable, and the other always mortal. It teaches, also, how tubercles are curable in their first period, and in their ulterior phases. In revealing the alterations of the kidney in Bright's disease, pathological anatomy has lighted up the causes of several forms of general dropsies, and conducted to more rational therapeutics. The knowledge of venous obstructions explains the mechanism of local dropsies. The discovery of blood-clots in the cavities of the heart reveals the

cause of certain sudden deaths. Arterial emboli often explains local gangrene, as also venous emboli and thrombi in the pulmonary vessels give the key to those sudden oppressions, often mortal, and until this discovery, not understood.

Great as are the benefits it daily renders to the *science* of medicine, they are equally so to the *practice* of the art, constituting one of its most precious resources. A certain malady may, to the vitalist, seem only an enteralgia with trouble of assimilation; but the practitioner who seeks to penetrate the cause, will recognize by the rectal touch, cancer of the intestine. Another, following the Hippocratic course, will diagnose a nervous dyspnea, while the anatomo-pathologist readily discovers pleuritic effusion. Indeed, what are all our aids of examination, such as the ophthalmoscope, laryngoscope, endoscope, but the study of pathological anatomy upon the living organism?

Again, how often do we suppose our remedies cured a patient, when some accident has demonstrated we were entirely wrong? The individual has perhaps died suddenly from some other cause, and on examination the effect we have attributed to our treatment has evidently resulted from natural causes. Or, how frequently has it been shown that mere symptoms are deceptive, and that a supposed inflammation is in truth no inflammation at all? Investigations carried out in this manner, with a true spirit, will lead us to criticise carefully our remedies; not, as some assert, induce timidity, but rather show the fallacy of violent measures to cut short or suppress disease, when its positive detection is liable to so many fallacies.

Still, we cannot fail to recognize that pathological anatomy, considered either as a base of scientific investigation, or as a resource in the practical application of the art of medicine, has its limits, and we should not demand of it what it cannot render. We cannot say there is lesion, whenever there is sickness, or suffering, or functional trouble; or that each morbid symptom has for its correlation an anatomical alteration. The material cause of a functional trouble may, as in the case of impure air, be wholly without the organism. Restore pure air and the disease is cured.

It often happens, too, that when the most palpable material lesions are established, they do not reveal what may be really desirable to know of the disease; and though they may explain certain functional troubles observed during life, at other times we are left in uncertainty, or have, at best, but imperfect notions of the different acts in the pathological drama. Or, again, the lesion we find, may be, as in ulceration of typhoid fever, but an effect of the disease. But has not

this resultant of a morbid act in the organism any practical value? Neglecting an effect, we may have the awakening of a new trouble, in perforation of the intestine. Sometimes the organic trouble ceases, while the lesion, the effect of such trouble, remains. Yet it is none the less a disease. Fibroid tumors of the uterus are the morbid products of a physiological act which ceases at middle age. While the fibroid growth may not therefore increase, still, it is a foreign body, having its importance in the future working of the economy. A calculus forms in the bladder, as a result of an alteration in the constituent properties of the urine. The urine may become normal, still the calculus remains, and becomes thus the essential cause of disease.

Still there are morbid states and pathological acts, of which corresponding organic modifications are inappreciable. Pathological anatomy cannot inform us what constitutes the herpetic, rheumatic or gouty diathesis; nor can it tell us by what mechanism or physical act, the fluxion which exists to-day in the knee, shall disappear, to reappear to-morrow with the same characters in the shoulder or elbow. These and many other instances which might be multiplied, show us that there are living forces in the economy which escape the appreciation of the pathological anatomist. We are forced to admit the influence of the vital principle, with its intellectual and moral manifestations. This is not of the domain of physical science, but our researches must always reach this impassable limit. In the condition of disease as in that of health, there are troubles of the living economy of which the natural sciences can give no explanation.

But granting the vital principle, with its modifications from moral and mental conditions, and also troubles from functional causes independent of anatomical lesions, shall we not therefore study where such lesions are incontestable? Besides who shall say that in a number of diseases, where anatomical researches have not to this time established a lesion, we shall not yet find intimate modifications of structure, which may, owing to our imperfect methods of study, have thus far escaped our observation? It is only necessary to mention in this connection the train of affections of the nervous system, which remain obscure in their changes and results, from the want of proper means of study of this most delicate of all the structures.

Thus far the considerations adduced, have related to the necessity of the culture of pathological anatomy, and the addition it contributes to the sum of positive knowledge in the daily experiences of the physician. There is, however, in its historical aspect a broader field of view, wherein the changes it has wrought, and the influence

it has exercised upon the other departments of medicine can be better appreciated. From a mere personal standpoint, one cannot comprehend the results it has accomplished, nor realize the vast progress its study has given toward placing medicine in the rank of a science. We who enjoy the benefits arising from its study, who receive as axioms the truths it has established, knowing of them no doubt nor wavering, cannot without this survey, realize the uncertainty and chaos which till its study hung over the medical world.

As in history, he who attempts to write of current events, or in biography of immediate actors, fails in the former to appreciate their true philosophy, or in the latter to realize the harmonious workings of character, from too immediate contact with such events and characters: magnifying the one with undue importance, or belittling some trait which is allied to the inner springs of character; or again, as the dweller on the plain knows not the grandeur and extent of the landscape, familiar to those upon the lofty height, being wholly absorbed with immediate objects; so must we, in order to appreciate the scope and influence of pathological anatomy upon the progress of medicine, cast aside immediate impressions, and seek that time when medicine groped without its teachings, and when the ingenuity of speculation replaced the toil of observation. Fortunately the dividing line is marked and decided. Pathological anatomy is the *younger* sister in the department of medicine. Scarce a century has elapsed since its claims were definitely established, and we could appropriately recognize on this occasion the centennial of the death of its great founder. Not that medicine, as a science, did not exist before the study of pathological anatomy, since we presuppose its existence by establishing the influence which it has exercised. Theoretically speaking, we can scarcely conceive that the science could have been so called when it ignored the laws of organic development, vices of conformation, the reproduction of injured parts, the formation of tissues, analogous and heterologous to the natural, the existence of lacteal and lymphatic vessels, the mechanism of the circulation, respiration, secretions, etc. Yet historically this is true. Without pathological anatomy, and even before its study, medicine existed and showed remarkable results. Its scientific relations, however, were wholly occupied with diseases in their external appearance, in the study of their physiognomy. It was the period of direct, visible observation, when the tableaux of symptoms shone in all their brightness; a brightness without penetration, which would substitute the glare and glitter of the surface for hidden wealth, unsought and so

unrevealed. The advent of a new period was announced by the study of the concealed or internal phenomena of disease. Such progress, however, does not prove the inutility of pathological anatomy, but rather that our science is not a dogma; that it was not born, grown and developed in a day; that, too, like the organic being, the phases of which it studies, it admits of evolutions in its growth, even though the lapse be centuries. Still a review of the progress of medicine up to the middle of the last century, strikes us painfully to see what obstacles routine, prejudice, and especially the pride of *systems*, oppose; here it may be by inertia, there by active violence, the establishment of correct principles. Physiology scarcely makes a conquest, ere it is turned into ridicule to be forgotten, or used, it may be, to serve as a rallying point around which to concentrate all pathology, without inquiring whether previous discoveries did not contradict the hastily drawn conclusions, or thinking if one point is illuminated, many others must still remain in obscurity. Thus at one time chemistry was invoked to explain all; at another mechanism, or possibly vitalism. Or again it was irritability, or it may be stimulation, and even at a comparatively recent period, through Broussais, the dogma of irritation. It was only when the pure and solid experimental method, which, seeking after truth, did not hasten to enunciate laws, but was content to record facts, drawing later from them established principles, was accepted as the basis of scientific research, that pathological anatomy took its inception. This change was by no means instantaneous. The mind like the body requires cycles for its evolution, and the germs of a principle are traced far back of its full development. In reviewing then, the philosophical spirit of the earlier and middle parts of the last century we find it markedly skeptical and materialistic; elements both of which are absolutely essential for scientific growth. The human mind was heartily sick of the vague and profitless speculation upon generalities. Though, through the labors of Morgagni, this branch of study took at one step its scientific relations, still the students can see a slow, but sure shaping for this method of study. Bacon and Descartes, each in their respective spheres, had revolutionized the world of thought. The former taking for guide in the study of natural science, *observation*, *experimentation*, and *induction*, traced the method which assured immense progress to the natural sciences, conducting Harvey Galvani and Newton to their splendid discoveries: while the latter in the domain of philosophy and abstract science, no less effectually broke the shackles which the force of ages had riveted on the mind,

by admitting nothing except what was demonstrated, by *reason* and *experience.*

To Morgagni, of Italy, then, belongs the credit, but little more than a century since, of laying the foundation of scientific pathological anatomy. While in the writings of his immediate predecessors and teachers, Malpighii, Albertini, and Valsalva, we notice the glimmerings of the truth, soon to be established by him, yet he it was, who by patient toil demonstrated the clinical relations of disease with their precise appearances after death. His life is a remarkable example of brilliant genius and untiring perseverance which ripened in the wisdom of maturity. What a lesson to the sunshine workers of our profession.

While yet a youth he excites the admiration of the illustrious savans who were his teachers. A doctor in medicine and philosophy at nineteen, he became prosector to Valsalva, and filled the chair during the absence of his principal. When twenty-four years of age he published his work "Adversaria Anatomica," and so placed himself in the front rank among anatomists. Far from being elated with his precocious success, he did not cease to instruct himself. Though occupied ardently with comparative anatomy and chemistry, he did not in the mean time neglect the practice of medicine. When too, we consider the enormous amount of material disposed of by Morgagni, we cannot but admire the wisdom he showed in burying those treasures during all his long career, in order not to give them to the public until he arrived at an advanced age, being almost an octogenarian. His immortal work written in the latter part of his life, "On the Seat and Causes of Diseases," is based upon the examination of more than six hundred cadaver; a number, considerable at all times, enormous for the epoch in which he lived. He joined to his own materials those which had been communicated to him by Valsalva, and those that he found in his manuscripts. But all the documents the works of his predecessors furnished, and even those of his master, lose in their importance and disappear before the extent of his own researches. For the first time is seen a man, grave and severe, separating himself from the anatomo-pathologists of the times who, were always seeking for the *wonderful*, and occupying himself with the most elementary questions. His anatomical descriptions are made with an exactitude unknown up to his time. As often as the documents he possesses permits, he confronts the symptoms observed during life with the results of post mortem examinations. He avoided, as far as possible, generalities, and confined himself to the recital of facts.

And may we not wonder that the founder of scientific pathological anatomy did so much with so great impartiality. No higher compliment can be paid to his memory than the words of Cruveilhier, applying to him the cognomen of his great cotemporary, "Haller of pathological anatomy."

It is not proposed in the limits of a discourse, to recite the progress made in the study of pathological anatomy from Morgagni onward. Yet historically it has a great interest. How its study, passing from Italy beyond the Alps, found a ready acceptance in the medical mind from the experimental bias at the time given by Haller to physiological studies. Holland, then as celebrated for her scholars as she had been for the nurture and growth of the principles of civil and religious liberty, cherished the infancy of the science during the stormy days of the French revolution, and the early wars of Napoleon. And when at length, after a series of wars running through a whole generation, France, though humbled, yet masculine from the hardihood of her efforts, again sought in the pursuits of peace an emulation for scientific studies, and employment for her genius, we find coming forth that wonderful school of pathologists, whose labors and writings have been the admiration and study of most of those before me; very household gods to the plodding worker in this field of research. The names of Desault, Bichat, Corvisart, Dupuytren, Cruveilhier, Andral, Louis, etc., occur at once as examples of this untiring and persevering school. England, though later in the field, was not indifferent to the impulse, and her literature shows many noble proofs of pains-taking and careful research.

While, however, it may not be permitted to follow out, step by step, the progress made in pathological researches, still it is appropriate to study the influence which its active cultivation exercised upon the science of medicine, and also the impress, still distinct, with which previous systems in turn biased the direction and character of investigations.

The cultivation of pathological anatomy represents, in the history of medicine, its logical development as a science. Though its rise was, as we have said, by no means sudden and unpremeditated, but due to the spirit of experimentation which arose in the sixteenth century, still, up to this period, observation was confined almost wholly to external phenomena, visible to the eye. Pathological anatomy opened the study of inner parts, and was thus enabled to give the brilliant symptomatology of Hippocrates a scientific basis, which the dogmatism and empiricism arising from partial systems have failed

to contribute. Indeed, looking to the past with the light now afforded, it was these premature efforts to construct systems, which for so many centuries kept medicine debased in its scientific relations. If the reserve of Hippocrates had not been discarded by his successors; if for the rational and experimental basis upon which he fixed the art of medicine, they had not substituted the premature attempts of a scientific organization, then impracticable, perhaps the destinies of medicine, better favored, would have been spared the immense detour, and the long parenthesis of twenty-two centuries before reaching Morgagni; floating, without cessation, during this long interval between incomplete and fallacious observation; between the Hippocratic doctrine, continued by tradition but obscured by systems, good perhaps, but insufficient, and the attempts at scientific organization even worse, because of their arbitrary character. To the premature efforts at systemization, the most brilliant and useful discoveries were nugatory and profitless, since they failed to conform to the reigning hypothesis.

While the study of pathological anatomy contributed much to the position of medicine as a science, its influence was no less marked in giving renewed impulse and harmonizing previous labors in the different departments of medicine. Acting as a central study, around which grouped, irresistibly, facts from other departments, it served as a rallying point for observers. Previously each arm of medical science, isolated in its speciality, had, for others, only distant relations. Anatomy, for example, had scarcely any alliance with pathology and therapeutics. Physiology was, so to speak, a stranger to the other two. While they might be called pieces of a grand whole, their relation was that of juxtaposition rather than combination.

Not less evident, also, was its effect upon the natural sciences; for as soon as some of the laws of abnormal development were discovered, it was recognized that these should be studied in the immense sphere of their activity. Such study alone, by an elevated generalization, could start from the quiet contemplation of phenomena, and extend the application to the utmost limit of creation, in discovering the laws which preside in all vital irregularities. This generalization of principles brought in closer alliance the different branches of science; and these, in turn, acquiring extent by researches, and unity by analogy, became animated by a new philosophic spirit. There seemed to have been something which acted as a germ to this common fusion and fruitful renovation. That germ was that it compelled the examination of nature herself for supposed facts; and we find the

literature of the period, when these researches were the most active, almost exclusively occupied by such discoveries. Few works were published but were inspired by such researches, and few authors but were compelled to discuss and analyze them. Pathological anatomy became thus another link in the fusion of the sciences; and if, on the one hand it harmonized medical observation, it was at the same time the common union of all biological studies.

So, too, was its influence happy in harmonizing and establishing many isolated truths of the ancients; truths which long observation and experience had established, but which, lacking a common bond of unity, had floated with the caprices of dominant systems, and lost, to a great degree, their significance and their force. Organic studies, then, by establishing an alliance between tradition and new discoveries, and making of modern medicine a science, which disregarded nothing in its past annals, which sought truth through all systems, but which, progressive since it had experimentation for guide, served as an active principle to renew quietly all parts, without at the same time disturbing the unity; differing widely in this respect from all past systems, which, from exclusive immobility, could neither allow addition nor subtraction.

Another result emanating from organic studies, was that it enlarged and is enlarging the field of experimentation. Previous to their cultivation this method of investigation had been confined almost wholly to the verification of normal acts in the economy. The first impulse was to increase studies of this nature, but we soon find the disposition apparent to imitate artificially phenomena, of which physiological acts gave no explanation. Art attempted to a certain point to group all the conditions and circumstances requisite to study a given fact; for to wait upon the manifestations of nature alone, would ill-satisfy the impatience of eager investigation. Nature rarely arranges them in an order suited to the necessities of our mental capacities, and though she follows in her works a regular and determinate march, this path is oftentimes followed so slowly, and by so many circuits, that the observer does not seize the relations of phenomena so distant from each other; for it may be when the phenomena arrive without previous intimation to the observer, he is taken unawares, or ill prepared for their examination; though the intelligence is competent when he can govern such conditions. Experimentation then, to a great degree suggested by pathological anatomy, has since been most assiduously cultivated, and we find in all the large centres of medical instruction special

facilities for its encouragement, and the dissemination of its teachings.

There is still another interesting feature connected with the development of pathological studies. However much it materially aided the scientific status of medicine, may have stimulated research in other departments, and enlarged the field of experimentation, it was itself fettered by traditions of the past, and must needs pass by turns, modified it is true by its own reflected light, through the different systems which had for so long a period governed medical thought. These systems, no matter what for the moment was the accepted belief, were always based upon the primary notions either of solodism, humoralism, or vitalism. Nor was it strange that in organic studies it should follow a similar cycle. For the attention of anatomo-pathologists was first naturally directed to those alterations, surgical in character, because external, having reference to the changes of form, volume and relations of organs; when observation was directed internally, it was only to such lesions as were striking and extraordinary, as cancerous tumors, biliary or vesical calculi. Investigation was prompted to determine the *seat* of disease. *Solodism* was then the first fruit of the study of pathological anatomy, and marked the period of Morgagni in pathology, and Haller in physiology; the latter carrying the idea to the extent, that he expected to find the cause of organic formations in the solids of the embryo. It continued through the century to Laennec and Dupuytren, forming as they did a nosological classification upon this theory. Bichat, it is true made an advanced step, in studying not the diseased organs, but rather their component tissues; and while he and later writers recognize to a degree the importance of the liquids, still the study of alterations of the solids, was more or less the principal end of science. We can then safely assert that pathological anatomy at its commencement was wholly solidist.

Investigation could not long remain satisfied with such barren results. The *cause* of disease must also be determined and for this purpose the fluids as well as the solids were to be examined. Andral, in 1825, gave an undoubted impulse to this direction of study. His "*Clinique Médicale*" is a work of science and conscience, to which medicine is indebted for many new truths, and the revival of many forgotten precepts from classical antiquity. A few years later, another eminent pathologist wrote: "The more we study diseases, the more we attempt to determine their immediate seat, the more we are forced to regard the *liquids* as the vehicle of many morbid causes." The

insufficiency of the solids, then led to the study of the liquids, as the insufficiency of the *seat* led to the study of the *cause*. The march of every science is the same. There is a progressive law of doctrines, and morbid anatomy could only reach its position in pathology, by traversing the grand sytematic ideas which had ever been upon the medical horizon. From humoralism, to complete the circle, the step was but short to *vitalism*. It was not, however, the vitalism of the ancients, which in its exclusiveness ignored all other causes; nor was it again the superstitious vitalism of Van Helmont, or the theological of Stahl; but a renewed vitalism, founded on bases which recognized not only the attendants of solids and liquids, but also the modifications of *forces;* and which recognizing the analogies with the general forces of nature, proclaimed also their differences. It was not a vitalism depending upon external influences, but of the organism itself, interwoven with every organ and tissue. Vitalism, thus understood, was the legitimate expression of that period of the study of morbid anatomy when unaided vision and chemical analysis had exhausted research, and when vast orders of morbid phenomena must be ascribed to vital force. "It took cognizance of everything specific, peculiar, or proper to the living being; of everything which not being discovered by the sight, nor the touch, nor any external sense, is not directly observable. It consisted in the study and acquaintance of the acts and conditions of the forces which work in the individual sleeping or waking; which characterize his individuality in the thousand and one modifications of race, of constitution, of temperament, of idiosyncracies; in the infinite variety of diseases, not less than in their periodicity, which it governs by a pre-established harmony."

In this connection it is interesting to notice by what a long and painful route anatomo-pathologists confirm the aphorism of Hipprocrates. "That we must consider in man, not only the solids and liquids, but especially the *active* powers, or that which gave them movement." Commencing then in solidism, organic science finished with vitalism, while Hipprocrates, commencing in vitalism ended, in the course of centuries, by associating organic study, proving at once the failure of any individual theory, and the necessity of reciprocal influence.

For a period of forty years from the commencement of the present century, France maintained a pre-eminence for labors and researches in pathological anatomy, and the literature of the subject during that whole period can be consulted best among writers of that country. All that patient toil, clinical observation, and chemical analysis could demonstrate, was chiefly elucidated by them. Who

that has read the classic productions of Bichat, Lænnec, Andral and Cruveilheir, but will cheerfully acknowledge the debt of gratitude which the profession owe to their works of toil and genius? With them pathological anatomy completed its *first* era. Vast as were the accumulation of facts, philosophical and accurate as were their deductions, still we are forced to admit that the study presented little more claims for scientific recognition, than did that of astronomy when Galileo made use of the *telescope;* for in neither had the inner laws of force and motion been developed. Unaided vision had to this time wrought both in health and morbid tissue all that could be accomplished. It was reserved for another people to bring to the aid of investigation, mechanical appliances, and a philosophic spirit of research, which to-day makes histological pathology rank high in the pyramid of science. The German mind was wonderfully adapted to the class of labor which devolved upon it. The brilliancy and éclat of the subject, its precise clinical relations and large generalizations, had been nearly exhausted by the French. Minute and patient toil must replace striking clinical demonstration Order, method, analysis, must come forth from the chaotic mass which artificial aid brought to bear upon its study. In a word, another era was opening. Previous to the cultivation of pathological anatomy, the theories of the laboratory explained the seat and causes of diseases; subsequent to Morgagni, and up to the period to which we refer, clinical observation had completed her almost perfect work. For who shall describe with greater accuracy and fidelity than Andral and Cruveilhier? Who more methodically than Lewis? How much advance upon the auscultation of Laennec, the percussion of Piorry, the cardiac murmurs of Bouilland? Bichat had carried the analysis of tissue as far as the eye and analogy would permit. Modifications, of situation, of dimension, of weight, of form, of color, consistencies, internal and external aspect, constituted under such conditions the limit of the study. Though such modifications are of extreme importance, yet they cannot reveal the profound microscopic and chemical alterations comprised in the texture, structure and composition of parts. Its study must again return to the laboratory; not however, as before, for profitless speculation, but to call the chemical and mechanical aids which would carry investigation to its last analysis.

Not that our immediate predecessors did not vividly feel the importance of such ultimate research. They accomplished with their means all in their power. Even when the microscope was introduced

as a recognized aid to study, there were physicians blinded, it may be by prejudice, or bewildered by the immense number of new details introduced into the study of pathological anatomy, who declared that such researches were almost wholly, if not entirely worthless. We blush to say that even at the present day, one may occasionally be heard to raise the voice of ridicule. And yet is it not closing one's eyes to the light? Is it not declaring one's self deliberately unjust or notoriously ignorant? Pathological histology has had and still has, the same as normal histology, its obscurities, its fluctuations, the necessity to retrace its steps. It is the history of every difficult science during its period of evolution. But who can deny that many questions in pathological anatomy have been definitively illuminated by the intervention of the microscope? Who can deny that this intervention has dissipated uncertainty upon many points, and contrary even to what was formerly its reproach, rendered more simple and easy the study of numerous lesions? Nor are they among the rarer forms, but those of daily occurrence.

The microscopic impulse spread with wonderful rapidity. Investigators were found on every hand, claiming through its use to penetrate the utmost mysteries of nature; enunciating generalizations and laws which subsequent researches showed to be untenable. The reaction which followed, threw, for a season, discredit on this class of researches. In this, however, the new era presented no exception to what experience and daily observation point us in the world of business as well as that of science. The establishment of any successful enterprise draws to its labors all restless, fitful workers, who, for a season, give a false glamour and obscure the real progress of the earnest worker. While the history of microscopic research is cotemporary and familiar to most of my auditors, still a concise review of its growth is necessary to the elaboration of the subject under discussion. The ardor for minute research was first noticed in the department of physiology, and the names of Shultze, Purkinje, Valentin, Wagner and Muller, should be especially mentioned for their histological labors at this period. In them, and particularly in the writtings of Valentin, we find the first traces of cell doctrines, or the recognition of cells as the basis of all organic forms. He does not, however establish the *nucleus* as the fundamental expression. About 1838, Schleiden and Schwann were simultaneously engaged in studies, the former upon vegetable, the latter upon animal tissues. Schleiden first described in a clear and definite way the formation of cells in vegetable structure according to a single and uniform method. Schwann catching the *unity* of *plan*,

applied it to animal tissues and by the adoption of the *nucleated* cell as the elementary form, gave an individuality and vitality to the anatomical details then collected. He caught the first glimpses of a truth, which, although it then needed verification, was soon to be recognized as the grandest in physiological science. Though this truth was speedily verified and accepted in the physiological world, and histology built upon it the sure foundation of a science pathologists were comparatively slow in grouping about this genesis, the many and varied formations and fluids which constantly claimed their attention. Yet it seems self-evident that the growth of normal histology and its relation to physiology, involved, as a necessary sequence, the same relations of pathological histology to pathological anatomy. This sequence, now so natural, required years to effect. The first efforts in pathological histology were directed to the study of certain secretions or exudations, and while, for nearly fifteen years, great industry and perseverance were shown, and many isolated facts collected, there was no central idea to guide or direct observation. It was still the principle of Bichat with reference to anatomy, studying disease by tissues, only carrying investigation far more minute by the use of microscopic and chemical aids. The writings of Gluge, Hasse, Vogel, Wedl, though constantly mentioning the presence of the cell in the composition of morbid humors and tissues, fail to recognize the unity of plan which had found full acceptance in physiology. Even the grand and almost incomparable work of Rokitansky, which, for faithful description and a generalization based upon the largest experience, must ever make it classic, enters but little into the minute structure of tissue, or the unity of the great law soon to absorb the pathological mind.

We cannot of course in our restricted limits trace the collateral workings of this idea. While distinguished names are noticeable in England and France; in the former Bennett, Paget, Todd, and Bowman, in the latter Donné, Robin, and many others; still the German mind, then as now, led in all researches demanding patient toil and close analysis.

Pathological histology had still to overcome world-long prejudices. Probably no barrier was more instrumental in retarding the recognition of the *cell* as the initial point in pathology, than the thraldom and and prejudices, which *systems* had so long wove around it. Much of the last century was passed in arranging and re-arranging the classification of diseases. Even during the present, many leading minds have found their chief glory in creating a system of pathology, pass-

ing from artificial to natural systems. None had, however, constructed one which could be termed scientific, and be accepted as a basis by all physicians. Before a new era could be fully developed, an emancipation must be attained from these systems, and classification in diease must not be deemed essential. Dogmas in every science are the same; when established they are the expression of general conviction, and become after a time chains which hinder the ulterior development of thought. After years of toil and labor, Virchow comprehended this position. In renouncing all attempts to create a system, he was disembarrassed from the last chains of dogmatism. In reducing disease to its cell life, he could reject the principal theory which governed science, rendering classification necessary, viz.: the unity of diseases; the idea that each malady constituted, so to speak, a being apart, a particular form of existence, which penetrated into the economy as a *foreign* body, and which should thus be maintained along with the sound parts. Disease and life are now no longer regarded as two things marching together; on the contrary, the true material existance is *found in the cells*, the elements of the body.

Fifteen years have not elapsed since Virchow, in a series of lectures, gave the results of his studies to the medical world, and now the doctrine of cellular pathology is universally regarded as the basis from which all morbid manifestations must be studied. Later investigations have modified some of the details of Virchow's teachings. These relate chiefly to the genesis of the *cell* proper, its physical and chemical characters, and the many and varied vital phenomena which originate in it. Such differences of opinion in no way invalidate the fundamental principal of the doctrine. The dogma is accepted that organic life, vegetable or animal, presents as last analysis a particular element, possessing always common characters, viz., the *cell*, characterized by the nucleus, the nucleolus, the contents and enveloping membrane. The presence of each of these elements is necessary to constitute a living cell, and from it all tissues of the organism are formed. Virchow, following this accepted truth in relation to the normal condition of tissues, has shown that it is equally applicable to pathological productions. His words are, "that every pathological production has its analogy in physiological formations. The elements of every pathological formation resemble and may be compared to normal elements pre-existing in the economy."

Discarding the idea of the *specific* character of certain morbid products, he further says, "we shall always find a physiological process

resembling the march of pathological neoplasms, and admitting of similar classification. Certain pathological productions are composed exclusively of *cells*, as epithelial tissue; or again, those analogous to conjunctive tissue, which, beside the cell elements, contain also more or less conjunctive tissue; or there is a third group of morbid tissues, resembling the higher order of organizations, as blood, muscles, nerves, etc. Most morbid organizations belong to the first two classes."

From considerations upon the structure of organizations, he passes to that of function. "Every living element of the human body responds to an excitation in manifesting its activity. This activity is awakened for three different reasons: for the performance of function, of nourishment and of increase. Hence arise three sorts of irritation: that which augments the organic function, that which accompanies an exaggeration of nutrition, and that which causes the formation of new parts."

On the other hand, besides these inflammatory processes, in which the cells are *active*, Virchow studies a series of alterations which he calls *passive*. In this latter form the elements may be completely destroyed, as in fatty and amyloid degenerations, or be deprived in a great degree of their activity. Even in these destructive forms he demonstrates physiological analogies. The normal types of these pathological evolutions are found in the normal secretions of the sebaceous glands of the skin, in colostrum, and in the corpora lutea of the ovary.

Hereafter the studies of normal and pathological histology are indissolubly connected. Starting with the cell as a common initial element, pathology must study it, in its aberrations, based upon an intimate knowledge of its normal characters. Simple as it may seem in principle, yet these aberrations are as infinite and varied as are the forms and intermingling of normal structure. Nor are these revelations made to the indifferent or inexperienced observer. To discover them requires, in most instances, the most delicate manipulation and tact in the use of optical appliances, as well as the many chemical and physical accessories to prepare structures for careful examination. The stimulus for minute research has carried mechanical and optical refinements to the most elaborate scientific formulas. Within a comparatively recent period, the "immersion" lens, by lessening very much the refractive power of light upon the polished surface of the lens, has aided much both in illumination, and penetrating power in the examination of objects.

It is this special tact and education, together with the time requisite for the various manipulations, which have thus far acted as seri-

ous hindrances to the spread and general acceptance of cellular pathology. The want too of these has furnished the ready sneer for the cynics in medicine, that one could see whatever he pleased, since there was no way of verifying what was only cognizant to the individual observer. It created, so to speak, an aristocracy in this field of study; and however desirous one might feel to verify in his own researches the truth or falsity of certain descriptions, such verification was impossible, from the barriers which the subject itself presented. The student must, in most cases, be content with the imperfect representations which an observer's drawings had furnished. The interests of science, however, cannot brook such an obstacle. She has too many resources, readily available, by which this exclusiveness can be overcome. The bonds of union between different departments of science are too intimate, and interlaced by too many affinities to allow any one to fail from want of support. Wherein the microscope cannot popularize, photography must come to its aid, and so perfectly has she already been taught, that the image produced is, in many respects, superior to that which direct miscroscopic observation reveals. Hereafter, tissue or structure shall be its own delineator. No imperfect description, no vivid imagination, no overwrought theory shall affect the truth of representation. It is a wonderful triumph of art. Tissues, requiring the magnifying power of one thousand diameters, are printed of any size, with all the disitnctness and vividness of outline, which the most skillful and delicate manifestations can give to the eye of the observer.

This popularization, so to speak, of the most hidden and minute recesses of nature, is due to the labors of one of our own countrymen. Very properly, too, it originated in that grand museum at Washington, formed and nurtured under the auspices of the Surgeon-General of the army, becoming not only the depository of the large experience of our late war, but returning to the profession at large practical benefits, the value of which cannot be estimated.

The experiments in photographing by artificial lights, either electric, magnesian, or oxy-calcyium, of microscopic objects under great magifying power, has first been performed by Dr. J. J. Woodward, of the United States army. His success has been all that the most ardent student could desire. Not only do his own observations verify those of Cohnheim upon the histology of minute blood vessels, but by a series of photographs are delineated, not only the epithelial cells of the capillaries with their nuclei, but also the stomata between these cells, said to give exit to the white corpuscles. The bearing of these

facts upon the theory of inflammation is familiar to those who have followed the discussions based upon these discoveries. I regard the practical exemplification which these photographs furnish as the most positive claim which pathological anatomy has thus far presented for scientific recognition. Our studies at once become more interesting and personal, for we know that we reason from the same premises, study the same tissue, which was once the exclusive favor of some skillful observer. The property of one has become the common property of all. Let us hope that the ingenuity of the gentleman who has so far perfected his mechanical appliances, may be further encouraged in his large field of labor. We recognize that he has established an era in the study of pathological anatomy, equivalent to that which marked the application of the microscope as a means of research.

It must not be understood from the tenor of the foregoing remarks, that histological pathology can or will replace studies in clinical medicine. The vast array of facts which this latter has already afforded to the pyramid of positive medicine are too valuable to be discarded or forgotten. Rather does pathological histology perfect the symmetry, fill in the many interstices, and give harmony and symmetry to the structure.

I have thus hurriedly, and necessarily imperfectly, reviewed the past and the present of pathological anatomy. No attempt has been made to consider its special relations to tissues, or the different forms of heterologous growths, for the literature of these subjects is ample and accessible. I have rather traced the growth of that idea which, originating but a century since, when medicine had scarcely made any material advance in the twenty-two centuries which had elapsed since the wonderful symptomatology of Hippocrates, has since advanced with marvellous strides, and already lays a claim of *exactitude* among the sciences. Pathological anatomy can no longer remain a secondary chapter in the study of pathology, but calling to its aid all the resources of art and science, it must take a first position. "It must, in studying alterations, go back to their origin, determine the producing cause, the modes of termination, elucidate the methods of spontaneous cure, signalize the resources of art. Interrogating morbid phenomena, it will not separate organs one from another, but comprehending all changes, in their connections and reciprocal influences, it will always have in view the entire organism, recognizing at the same time all the physical and moral conditions peculiar to the patient. Studied thus, it will become more and more a science full of interest, furnishing for the art of medicine most useful aid, and constituting a most powerful auxiliary to its practice.

ARTICLE III.

Laceration of the Perineum and Bladder—Introduction of pieces of wood—Formation of Calculi—Operation. By GEO. BURR, M. D., of Binghamton, N. Y.

Saturday May 6, 1865. Wheeler, aged 33 years, of a strong, robust frame, sanguine temperament, of temperate habits, and by occupation a farmer, states, that eight months previous, in stepping over a fallen hemlock tree, his foot slipped, and falling upon the log, a rough jagged stub or short limb was driven into the perineum, wounding the rectum and penetrating the bladder. The stick was broken off in the wound, but, as at the time supposed, was soon after removed by a surgeon who was called. For several days urine was discharged through the wound, accompanied by sensations of heat and pain in the vicinity of the prostate gland. In less than two weeks the wound healed, the urine passing through the natural channel. Some weeks later he observed a mucous or purulent discharge from the urethra, accompanied by severe pain after urinating. These symptoms continued, with occasional remissions of pain. They, however, gradually increased until the pain became constant and the discharge aggravated. He was treated from time to time by different physicians, for nearly every disease incident to the urino-genital organs, but without any relief.

May 6, 1865. I first saw the patient in consultation with Dr. P. B. Brooks. The external wound was entirely closed. From the history of the case and the symptoms present, we came to the conclusion that a portion of the stick still remained in the vicinity of the neck of the bladder, probably on the outside, and that there was an opening into the prostatic or membranous portion of the urethra. An operation for the removal of the foreign body was determined upon, to be commenced as in the lateral operation for lithotomy, and to be extended as far as should be necessary.

May 7. The patient was placed upon the table, when the sound revealed the presence of a foreign body *within* the urinary bladder. The full operation for lithotomy, therefore, was before us, and it was at once proceeded with; Drs. P. B. Brooks, James Brooks, Jackson and Doyle, and Messrs. Henry Oliver Ely, and D. S. Burr, medical students, assisting. Two calculi were removed, the nucleus of each being a small piece of wood, around which the calcareous matter had

been deposited. Considerable difficulty was experienced in removing them, as they seemed to be imbedded in the coats of the bladder. They were, however, finally extricated, and the patient placed in bed. The subsequent treatment has no particular interest, the usual attentions were given him, urine passed by the urethra the 22d day, and from that time his recovery progressed rapidly.

The main point of interest in this case is the manner in which the foreign bodies were introduced into the bladder. Cases are common where different substances have passed into the bladder from the urethra; but, except from wounds received in battle, it is believed that cases are not frequent where the foreign body has been forced into the bladder by violence.

Another point in the case is, that it illustrates the ability of nature to repair severe injuries of the parts involved. There was extensive laceration of the rectum and of the bladder, but the wound had completely healed, and there was no change either in the structure or relations of the parts to embarrass the operation. The original wound, however, was made upon the right side of the rectum, and the seat of the laceration of the bladder was above the point of incision in lithotomy, probably in the *trigone* space.

The case also illustrates the importance of care in determining in similar instances if all the foreign substance has been removed. A thorough exploration of this wound, even to enlarging it by the knife, might have detected the pieces of wood left in it, and their removal at the time would have saved the patient a vast deal of pain and suffering, and prevented the necessity of a subsequent serious surgical operation.

ARTICLE IV.

Two cases of Luxation of the Elbow, backwards; one of fourteen weeks and the other of sixteen weeks standing, both successfully reduced by the aid of subcutaneous section of the triceps tendon, and recovery with nearly perfect motion. By LEWIS A. SAYRE, M. D., Professor of Orthopedic and Clinical Surgery, Bellevue Hospital Medical College.

Case 1.

Ricardo Gibbs, aged five years, a native of Cuba, came to me on the 9th of August, 1867, with a luxation of the forearm backwards, the result of a fall received fourteen weeks previously.

The limb was very nearly straight and fixed at the joint, no motion being manifest. Several attempts had been made in Cuba to reduce it, but they were all unsuccessful.

Col. Lewis Lay, of Havanna, then sent him to me, and after a careful examination of the case, I decided that it was worth a trial, although the fibrous adhesions were so firm as to give it the appearance of bony anchylosis.

Dr. Frank Hamilton and Prof. James M. Bush, of Kentucky, were called in consultation, who both agreed with me as to the propriety of attempting the reduction.

The boy was perfectly anesthetized with chloroform by Dr. Paine, and I made vigorous efforts at reduction by flexion and extension for nearly half an hour, without any manifest change in the position of the bones, although I succeeded in breaking, considerably, the fibrous adhesion. Dr. Hamilton then tried the reduction, but without any better result than my first effort. I made another attempt, and finding that I could not succeed unless I fractured the olecranon, I requested Dr. Hamilton to divide the triceps tendon subcutaneously, which he did, while I made it tense by very strong flexion, and in a few minutes I succeeded in making the reduction perfect and complete. The elbow was secured at a right angle with "Ahl's Felt Splint," and kept wet with an evaporating lotion. The advantage of these splints over all others that I have seen, in cases where we wish accuracy of adjustment, with permanency of retention, and at the same time wish to keep the parts wet with lotions, either hot or cold, without any danger of their change of form or position, can only be appreciated by those who have had practical experience in their application. In this case it was retained on the arm for several days with

out the slightest change in position, although saturated with the lotion all the time, and gave the greatest possible comfort to the patient.

Two days after the operation the arm was much swelled, and greatly discolored from the extravasated blood, but it gradually subsided, and on the tenth day the swelling had almost entirely disappeared, but the discoloration lasted for some weeks.

After the tenth day the splint was removed daily and passive motions given to the joint with friction to the arm and forearm, and on the twentieth day from the operation, the flexion and extension of the elbow could be made complete, and without any pain whatever. There was very little voluntary power over the brachialis anticus muscle, and electricity was applied to it and the biceps flexor. This was continued every other day for two months, with friction and passive motion to the joint, by which time he could flex his arm to a right angle, could tie and untie his cravat and extend his arm nearly straight.

He then left for his home, and I have not seen him since, but learned from his father, a few months since, that the motions of his elbow were as good as that of the other.

Case 2.

On the 7th of December, 1870, Dr. E. S. Dunster sent to my clinic at the Charity Hospital a lad aged thirteen years, who had a luxation of his elbow backwards, of thirteen weeks' standing, and had been treated by a druggist in the country, by a straight splint, and of course his arm was quite firmly anchylosed in a perfectly straight position.

Dr. Dunster had tried, a few days before, to reduce the luxation, but without success, and sent him to me for another effort, if I deemed it advisable. The joint was so inflamed at the time from the result of this effort, that I was afraid to attempt it, and advised the application of ice-bags until the inflammation should subside.

He was presented again on the following week, and while examining his arm, and before any attempt was made to reduce the luxation, he swooned, and was revived with great difficulty.

The boy was anæmic from starvation, and the bruit in his neck was like that of a chlorotic girl.

As any anesthetic in his present condition was dangerous, and as it was impossible to perform the operation without it, he was advised to wait until his general health was improved, and for that purpose he was put upon a nutritious diet, with a full allowance of iron and quinine.

Some doubts having been expressed as to the propriety of attempting the reduction, I called a consultation on the 22d of December, 1870. Dr. Hewitt, formerly surgeon U. S. A., advised exsection; some of the other gentlemen also advised this course. Dr. Mason detected the fracture of the coronoid process, which had become attached to the anterior portion of the condyle of the humerus.

The arm was *perfectly straight*, and admitted of only the slightest possible motion.

After carefully weighing all the points in the case, I decided not to resect it, as it might be followed by tedious suppuration, and his condition was too feeble to take that risk.

Resection of a joint that has been a long time inflamed, and where the periosteum has become thickened, and will readily peel from the bones so that you can make the resection *sub-periosteally*, is a very easy matter; but when the bones are in their normal condition, it is impossible to detach the periosteum except in shreds. And I therefore decided to attempt the reduction, and should this prove impossible, I would then fracture the olecranon, and take my chances for motion; but at all events have recovery with the arm anchylosed at a *right angle*, which would make it much more useful than in its present position.

He was fully anæsthetized by ether, and with some considerable force I succeeded in breaking up the adhesions, and flexing the arm to an angle of about 135 degrees, when I was checked by the tension of the triceps; and fearing that the olecranon would fracture if any more force was used, I requested Dr. Mason to divide the triceps, which he did subcutaneously, and almost instantly the forearm was brought to a right angle with the arm, when it was checked from any further flexion by the coronoid process, which was attached to the anterior portion of the condyle of the humerus.

By using the forearm as a lever, and with some considerable force, I fractured off this attachment and succeeded in flexing the arm to an angle of forty-five degrees.

The arm was secured in this position, and treated the same as in the first case. Very little inflammation followed, and at the end of a fortnight passive movements were commenced, and I was informed yesterday, by Dr. Dunster, that he has every prospect of a recovery, with very good, if not perfect motion.

The dislocation had existed sixteen weeks, lacking two days.

Gross, vol. 2, page 144, says: "The reduction of this dislocation is

extremely easy, if attended to immediately after its occurrence, but very difficult if it be neglected even for a very short time.

Upon this subject there is no difference of sentiment among practitioners, writers and teachers.

My experience in regard to it is ample, and in perfect accordance with that of the profession generally.

I have no recollection of ever being foiled in my efforts, in a solitary instance of recent dislocation of the elbow joint.

While I can call to mind a large number of cases where everything that could be done proved unavailing, after the third week, and sometimes even by the end of the second. I am not prepared to assign any reason for this, to say why a displacement that is always so easily rectified, if properly managed in its early stages, should so soon become utterly resisting, and defying all the best directed efforts of the surgeon."

These two cases show that we may sometimes be succesful, even after a longer period than three weeks, and therefore justify the effort.

That there was a fracture of the coronoid process, in this case, there can be no possibility of doubt, its crescentic edge could be distinctly felt on the anterior surface of the condyles of the humerus, and to which it had become quite firmly attached, and when the forearm was strongly flexed, it was fractured off with a very distinct snap, that was clearly audible to the entire class.

The olecranon was not fractured, nor any other bone, and, therefore, this distinct noise of a fracture must have been made by the fracture of the coronoid from its new attachment.

Hamilton, in his work on Fractures, edition, 1863, page 267, *et seq.*, says: "Dissections have established the possibility of this fracture as a simple accident in the living subject, but I have not, myself, seen any example of which I can speak positively."

He relates two cases, in which the existence of such a fracture was at first suspected, but in regard to which he afterward had very little doubt that his diagnosis was incorrect.

After analyzing the reported cases, he concludes: "The fact, therefore, that so few cases have been reported, and that most of these are far from being clearly made out, remains presumptive evidence that the actual cases are extremely rare; but, if to this we add such negative evidence as is furnished by actual dissection and examinations of the pathological cabinets of the world, we think the testimony almost conclusive."

"Only four specimens have been mentioned by any of the surgical

writers known to me." And these four he shows to be not altogether satisfactory, and concludes: "We are, therefore, left as before, with no evidence that the coronoid process was ever broken by the action of the muscle, and with only one example in which it is probable that a fracture occurred, as a consequence of a dislocation of the radius and ulna backwards."

The last one of my two cases I feel quite confident can be added to this list.

And Dr. Mosely, Demonstrator of Anatomy in Bellevue Hospital Medical College, showed me a specimen a few days since, which he had obtained in the dissecting rooom, in which there was distinct fracture of the coronoid process, and union by ligamentous junction.

Dr. Darling, Professor of Anatomy in the Medical University of New York, has another specimen which was presented to him by Dr. Bradley, of this city, which is almost the exact counterpart of my second case, luxation of both bones backward, and fracture of the coronoid process, which had become anchylosed to the anterior portion of the condyle of the humerus.

The variety of this accident, according to Hamilton, and the difficulty of its treatment, according to Gross, and which, in this instance, was so perfectly successful, has appeared to me a sufficient reason for placing the facts before the Society for permanent record.

285 FIFTH AVENUE, *Jan. 20th*, 1871.

ARTICLE V.

Puerperal Eclampsia. By HARVEY JEWETT, M. D., Canandaigua, N. Y.

Puerperal eclampsia may be regarded as one of the most frightful and alarming diseases that medical men are called upon to treat.

In view of the new and tender relation of the young mother to her offspring, as well as the anxious solicitations of relatives and friends, there rests no ordinary degree of responsibility upon the medical attendant, when suddenly and unexpectedly he finds his patient (who a moment before was flushed with bright prospects and high hopes for the future) insensible, frightfully distorted with violent convulsions.

The suddenness of the attack, the alarming character of the spasms, the consternation of attendants and relatives, all contribute to make the case one of fearful magnitude and responsibility, and demands at the hands of the attending physician prompt and positive measures for relief.

Unless we are successful in arresting the spasms in a short time, the patient is doomed to a speedy death from the repeated recurrence of the convulsions. Hitherto, in my own experience at least, so large a proportion of the cases have proved fatal, when guided by the highest authority in their treatment, that I have been induced to cast about for some other theory and more reliable remedial agents to arrest the spasms and save the patient. In this regard I am happy to say that in some measure I have been successful. At all events, when my patients were treated in strict accordance with the best authority laid down in the books, as a rule, they died. Whereas, when treated upon the presumptive theory that the convulsions are the result of "materies morbi," generated during pregnancy, and that delivery is a developing influence of the peculiar morbid condition of the system operating on the brain and spinal nerves, or, as Dr. Tyler Smith expresses it, as dependent upon some irritation of the excito-spinal nerves, I find that in almost every instance they recovered. These views are founded upon Dr. Marshall's researches into the physiology of the nervous system, and a practical application of that eminent writer's discoveries to the pathology and treatment of puerperal eclampsia.

Many cases, apparently well authenticated, are on record, where

females in the early stage of gestation, and without labor pains as a procuring cause, or when pregnancy does not even exist, have suffered from this peculiar form of eclampsia. But these, I apprehend, may be regarded exceptional cases, or more properly ruled out of the classification under discussion, and treated under the head of hysteria or epilepsy.

It is far from my purpose, however, in this short paper, to allude to the well authenticated classification of these cases, or to speak of that which all medical men can so easily refer to in any recognized authority on this subject.

My object is merely to make a practical note on the treatment of this disease, which to some extent has bid defiance to the remedies so universally recommended by the highest authority, both past and present, and thus draw the attention of the profession to a plan of treatment and the use of remedies which have proved eminently satisfactory in my hands.

What is the nature and cause of the disease we have to contend with? Is it the blood, or is it the brain and nervous system we have to deal with in our efforts to arrest the spasms? I apprehend neither, exclusively, and both to a certain extent, in their relations to each other.

In all cases of pregnancy, the blood and fluids of the system are abnormal, are changed from a healthy standard to a greater or less extent, and charged with certain influences calculated to overwhelm the nervous system, and tend to the development of eclampsia. Whether this toxic influence in different individuals is in degree or kind, is not well understood. We know that certain females are strongly predisposed to take on this spasmodic condition, without any well defined indications preceding the attack of eclampsia. This poisoned condition of the fluids of the system may arise from various causes, but principally from the pressure of the gravid uterus upon the venal veins.

The pressure of any hard body upon the kidneys, tends to interfere seriously with the function of that organ, to produce congestion, thereby abating its eliminating function, and producing toxemia of the blood.

The non-elimination from the kidneys, under any circumstances, would necessarily produce more or less mischief, but more especially so during pregnancy, when the blood requires an extra degree of depuration to cast off the excrementitious matter from both child and mother.

This faulty or impaired function of the kidneys, is marked in the

latter stage of gestation by extreme œdema of the lower extremities, a peculiar, waxy puffiness of the face, scanty urinary secretion, *almost invariably loaded with albumen*, together with general lassitude, weariness of body and confusion of mind. I would not be understood to say, however, that when all these symptoms are prominently marked, that eclampsia necessarily follows, but that convulsions seldom occur without these primary indications, and especially *albuminous urine.*

According to Niemeyer's theory, these symptoms are due to a temporary parenchymatous change, or degeneration of the kidney itself, and not to congestion or nephritis, from the pressure of the gravid uterus upon the emulgent veins, which we can readily understand will cause both albuminous urine and the retention of a large amount of urea in the blood.

If the system is charged with toxic influences, accumulated during gestation, which act as a procuring cause of these spasms, then it should be an object of vital importance to remove this agent or influence, whatever it may be, as speedily as possible.

Almost all writers for the last half century have based their practice upon the theory, that the brain in primiparous females especially, is to be regarded *ipso facto*, in a hyperæmic state, for weeks or months preceding parturition. This was supposed to be consequent of the pressure upon the descending aorta. And also during violent and long continued labor pains, the solid contracted globe of the uterus is pressed violently against the descending aorta, thereby impeding the flow of blood to the lower extremities, and necessarily compelling the carotids and superior vessels to carry a preternatural quantity to the brain. Based upon this theory of the pathology of the disease, we have no alternative but to carry out the advice so uniformly and peremptorily laid down in all works on this subject, both in this country and by continental writers, and that is, to bleed copiously, as the first and the last great remedy.

The extent to which bleeding is carried being regulated by the violence and frequency of the convulsions, without much reference to the amount left in the system absolutely essential to carry on the vital process.

The history of the case, previous habits and peculiarities of the patient in regard to predisposition and exciting causes, are all ignored as indications for or against the use of the lancet, and we are commanded to bleed almost empirically to the utter exhaustion of the vital forces of the patient.

The practitioner is left without any guiding principle, any data by which to regulate his practice in the use of this important and powerful remedy. In compliance with this advice, I bled in my earlier practice copiously and repeatedly, with very unsatisfactory results, as in a large proportion of cases my patients died under this treatment, and simply because it did little or nothing toward removing the cause which produced the disease.

The introduction of chloroform as an anæsthetic agent has been in this, as in many other diseases, a boon of priceless value to suffering humanity; not that I believe there is anything in the use of chloroform that tends in the least degree to remove the existing cause of the spasms, and I never administer it with any such view, but simply to abate the frequency and violence of the convulsions and give time for the action of eliminating remedies upon which we are to rely for a radical cure.

The three great channels upon which we are to depend for this purpose are the skin, the kidneys and the bowels. The first two are too slow and indirect in their operation to be made available and answer the indications in the case, and we are to depend, as the only alternative, upon *the vicarious action of the bowels* to cast off this poisonous element in the blood and stay the progress of the spasms.

In all cases of convulsions I administer chloroform and ether at once. If the patient has not been delivered, and the head of the child is within reach of the forceps, apply them and deliver as speedily as possible. If this is not practicable, and version can be effected, that is the next best plan for relieving the patient of this source of irritation. When this has been effected, give croton oil or any other active saline cathartic, in connection with turpentine enemas, in such quantity and as frequently repeated, as the stomach will tolerate, until the bowels have been freely evacuated.

In scarcely an instance under my observation has the patient had more than one or two convulsions after this has been effected, and generally they cease altogether if the evacuation is copious and liquid in character. Prior to 1860 I find ten recorded cases that were treated in compliance with the best authority at that time, by copious and repeated bleeding, cupping, leeching, blisters, sinapisms, cold to the head and spine, opium, antispasmodics, etc., etc. Out of the ten cases thus treated seven died.

Since that period I find six cases that were treated with chloroform and drastic cathartics, not one of the number were bled, and all recovered.

There exists in puerperal eclampsia such a uniformity of symptoms and conditions that I need give but two or three as representative cases, in illustration of my views concerning its treatment.

Case 1.—Mrs. S., aged 25, of delicate nervous temperament, was delivered of her first child after an ordinary labor in July, 1864. Just at the termination of the labor, and before the removal of the placenta, she went into a violent convulsion. She was put immediately under the influence of chloroform and ether, and as soon as the spasm subsided, gave three drops of croton oil in a teaspoon of milk. She was kept slightly etherized for an hour and a half, when she had another convulsion.

The coma was quite profound after the second spasm, the breathing loud and stertorous. Two drachms of spirits of turpentine were beaten with the yolk of an egg, diluted in a quart of warm water, and used as an enema. In half an hour there was a profuse evacuation of the bowels. The chloroform was gradually withdrawn, and in six or eight hours the patient was restored to consciousness, and recovered in due time without any recurrence of the convulsions.

Case 2.—Mrs. F., aged 23, of full plethoric habit and sanguino-nervous temperament, was confined with her first child in March 1868. The labor was progressing satisfactorily, the head of the child was engaged in the lower straight of the pelvis, when suddenly, without any premonition, she went into a convulsion. As soon as practicable, chloroform was administered, the forceps applied, and the delivery effected. Three drops of croton oil were administered in milk. In half an hour it was evident that the oil had taken effect, from the intestinal disturbance. In one hour from the completion of the first, she went into another spasm, from the effect of which she was insensible for several hours. The oil operated freely in one hour and a half after it was given, and the patient recovered in due time without any untoward symptoms.

Case 3.—Mrs. A., aged forty, of delicate health and nervous temperament, was confined December, 1870, with her fourth child. The labor was completed in three or four hours without any unusual indications, except she said there was pain in the head and glimmering before the eyes. In half an hour after the birth of the child and the removal of the placenta, she remarked that she could not see, and was instantly seized with a convulsion. A combination of chloroform and ether was administered, and three drops of croton oil given. In one hour she took two drops more, and at the end of two hours she took two more, making in all seven drops of croton oil, without any

effect. Large enemas containing turpentine were given at short intervals, which were retained. In addition to the croton oil and enemas, during the twelve hours she took three ounces of castor oil, which had no effect upon the bowels until the end of seventeen hours from the birth of the child, when the medicine operated freely as a cathartic. During this period the convulsions recurred at intervals of from one to two hours, making in all twelve convulsions in seventeen hours. After the operation of the cathartic the spasms ceased altogether, and in two or three days the patient gradually returned to consciousness. In this connection it would be proper to state, that during the convulsive period, one drachm of bromide of potash was given, and during the last hour, immediately preceding the cessation of the convulsions, she took at three different times eighty grains of hydrate of chloral. It might be claimed, inasmuch as the convulsions ceased in connection with the administration of the chloral, that the relief is properly due to that remedy. My own experience in the use of this agent, in the treatment of this disease, is so limited that I can arrive at no definite conclusions as to its power in controlling or mitigating its severity.

This is an instructive case, and one from which different deductions may be drawn as to the credit due to the remedies administered.

In view of all the facts connected with the case, however, it is my opinion that little or no benefit was derived from the anæsthetics, bromide of potash or hydrate of chloral, inasmuch as there was an unmitigated persistence of the spasms until the action of the cathartic, when they ceased altogether. During the seventeen hours the patient was kept almost constantly under the influence of chloroform and ether, which had the effect, together with the spasms, of producing severe capillary bronchitis, with laryngial inflammation, thereby retarding the convalescence of the patient, and at one time seriously threatened her life. The aphonia was complete and lasted between two and three weeks.

In the three cases just cited, and in every case where tests were made, a large amount of albumen was found, and the specific gravity ranged about 1020. The general principles applicable to the treatment of other forms of disease, are eminently proper in the treatment of puerperal eclampsia.

If, when strictly carried out, they do not always tend to definite and satisfactory results, they will at least reconcile the apparently contradictory and conflicting theories and opinions of various authors on this subject.

There is some diversity of opinion in reference to artificial interference in the progress of natural labor. Perhaps no arbitrary rules can be laid down to govern under all circumstances, but it can be safely assumed that if delivery is practicable, either with the forceps or by version, it is proper to effect it as speedily as is compatible with surrounding indications.

Upon no one point is there such universal unanimity of sentiment as that of copious and repeated bleedings to relieve the hyperæmia of the brain, which in a large proportion of cases exists only in the fertile imagination of visionary theorists.

In my own limited observation and experience it has been perfectly impotent to arrest or even to mitigate the violence of the spasms. Grave objections may be urged against the indiscriminate use of chloroform in the treatment of this disease. It cannot have escaped the observation of any one in the treatment of these cases, that the heart's action fluctuates in a remarkable manner, the pulse at times indicates a preternatural degree of vascular activity and force, at other times so feeble as scarcely to be felt, and may be suspended altogether if the effect of chloroform be superadded to the other depressing influences. Then again, if chloroform is free from this objection, we may very properly ask how much does it accomplish in the way of holding the convulsions in check, and thereby give time for the effect of radical eliminating remedies. The legitimate action of chloroform is confined to the function of the cerebral or sentient portion of the nervous system. It neither abolishes or diminishes the proper function of the excito-motory or spinal nerves, as indicated in the *suspension of suffering*, but not in the least degree interfering in the *progress of a natural labor*. If this be true we may very naturally infer that chloroform has little or nothing to do with the arrest or suspension of these involuntary spasms, any more than it has to do with the arrest of natural labor pains.

If puerperal eclampsia is the result of uremic or any other poison acting upon the excito-motory spinal nerves, as the result of non-elimination during the period of gestation, we are, in the treatment of this disease, to address our remedies to the casting off of this poison by the use of drastic cathartics, as the only channel we can make available in the exigencies of the case, and in no instance under my observation, where it has been faithfully carried out, has it failed to produce satisfactory results. The obscurity hitherto connected with the remote and proximate cause of this disease has left prophylactic or preventive measures quite out of view. Scarcely any suggestions

are on record in reference to preventive treatment. In puerperal patients, where there was reason to apprehend the development of eclampsia from the obscure indications in the case, I have been in the practice of giving saline cathartic and diuretic remedies, such as sulp. magnesia, acetate and super tart. potash, with infusion of juniper berries. How much benefit results from the use of prophylactic remedies in all cases, is a question not easily solved, as we can have no assurance that convulsions would have resulted had not the remedies been administered. When there is any reason to apprehend convulsions, frequent tests for the presence of albumen should be instituted during the latter period of gestation, and the cathartic and diuretic remedies persevered in until the urine is comparatively free from the albumen

ARTICLE VI.

Annual Address delivered before the Medical Society of the county of Albany, Nov. 15th, 1870, by WILLIAM H. CRAIG, M. D., President. Sent as a communication to the New York State Medical Society, by resolution of the Albany County Medical Society.

Gentlemen of the Society:

I crave your indulgence while I endeavor to fulfill the task imposed upon me by the by-laws.

A community forms its opinion of a profession, first, by its usefulness, and, second, by the character of its representatives. The legal profession is judged by the equity of the law, the fidelity of its advocates, and the probity of the judiciary. The religions of the day are estimated by the morals of the people, and the zeal and faithfulness of the clergy. So with the profession of medicine; it derives its status from the skill of the physician, and the benefits it confers in promoting the health of a community. And, thus, the standing of our profession is constantly before the public, and necessitates an interest in its progress, which is generally admitted to have equalled, if not excelled, the other modern sciences. As examples of this may be adduced, the marvellous changes which modern pathology has made, in our knowledge of the nature and cause of many diseases, together with the valuable contributions which have been made by the various special departments of medicine. The audacity with which modern operative surgery has undertaken and rendered successful, operations which a few years ago were counted unjustifiable, is worthy of all praise; yet, notwithstanding all the evidence we have of the great strides this science has made in alleviating human suffering, is there not indication of a great want of confidence in the regular profession of medicine, as manifested by the increasing demand for patent nostrums, and the popularity of the irregular kinds of practice?

Now is it not fair and just for every physician to ask himself, what are the causes of such want of confidence, and what should be the remedy? Is not the profession partly responsible for this condition of its science? Are there not obstacles to its advancement which lie within the power of its followers to remove?

A reference to the past history of medicine will show that it has always been characterized by extremes, one system of speculative

ideas following another in rapid succession. The past two thousand years have advanced such widely varying theories as naturalism, empiricism, eclecticism, humoralism, solidism, stimulism, vitalism, chemicism, etc., coming down to the cellular pathology of our own times, which, together with therapeutics, undoubtedly form the true principles of medical practice. This modern theory of investigating diseases, now in vogue for about half a century, and for the last twenty-five years occupying almost exclusively the mind of the great men in the profession, appears the true system of tracing disease through organic changes and causes, from the healthy to the diseased condition. The energy with which the system of pathology has pushed its investigations, aided by the microscope, sphygmograph, thermometer, etc., together with the books, general and special, on the subject, with societies and associations, reports and journals, is worthy of all praise. It has been the theme of many glowing enconiums, and I would not say a word to detract from the great benefit it has conferred on science, in the treatment of many diseases, as well as the aid it affords to a correct diagnosis. Yet, I am disposed to say that it has not accomplished what its advocates had hoped for, in alleviating and eradicating those diseases generally considered incurable.

What interest is it to the victim of disease to know that the physician is able, by means of physical signs, to tell him the organic changes which have taken place in the lungs, in phthisis pulmonalis, or by microscopical or chemical examination, that he has scirrhus, or Bright's disease, unless he is able to point to the means of relief, or, by some treatment, to prevent or eradicate these diseases which are the great enemies of humanity, numbering their victims yearly by the thousand?

Does not this indicate that the science of medicine has been more theoretical than practical in our time? Is it not a little remarkable that just in proportion as this theory has been promulgated, men of high reputation in the profession have lost confidence in therapeutics, and therapeutic agents, and rely mostly on nature and hygiene, which were the prevailing ideas of the treatment of disease in the days of Hippocrates, and have had such brilliant advocates recently, as Sir John Forbes and Dr. Bigelow? The useless administration of medicines in many cases, together with the diversity of opinion among physicians, regarding the treatment of some diseases, may have caused a partial prejudice in this direction. Thus, in pneumonia, where the conditions are similar, one physician will follow the stimulating treatment, another the antiphlogistic, while still another will rely entirely on nature.

Does not this contrariety of opinion serve to destroy the confidence of the public in the regular practice, and induce many to adopt the popular isms of the day.

While these may be some of the reasons that affect the status of the profession, yet, I apprehend that the great fault has been in the tendency to advance medicine as a science, rather than to make progress in it as an art. To-day, while the science of physiology and pathology is constantly undergoing investigation, so that the works on these subjects have to be constantly revised to keep up with the changes and new discoveries, yet, in therapeutics, we are satisfied with the old and absurd nomenclature of Cullen, such as lithor-thrypties, deobstruents, etc.

Is it not remarkable how little real persistent scientific effort there has been made to determine the therapeutic effect of agents within the past thirty years, while the pharmaceutist and chemist have performed such laudable work in the discoverey of new remedies, and in furnishing pure and reliable articles of medicine. I except in these reflections the scientific efforts made by the late Dr. Tulley, whose investigations gave promise of important contributions to the materia medica. In view of the great light which physiology has thrown on the nervous system within the past few years, should it not stimulate to more investigation in this direction? Is not modern chemistry becoming every day synthetical as well as analytical? May we not reasonably look in this channel for the means of counteracting the horrors of hydrophobia, penetrating the mysteries of Bright's disease, and checking the fearful fatality of phthisis? Are not the elements susceptible of accomplishing this work all around us in nature, and simply awaiting the genius of the "Coming Man" to discover them.

A few years since, when the scientific naturalists supposed their work about completed on the subject of the *fluviatile genera*, Prof. Agassiz made his celebrated visit to the great River Amazon, where, in a few months, he discovered more than three times the number of species of fish than had been known before. So I believe the therapeutic department of medicine will be yet illuminated by like patient and bold research.

If a comparison were permitted of the relative benefits to the human race, what discovery has modern pathology made to equal the utility of anæsthesia? Yet twenty-five years ago, the man that had asserted as possible that which has been accomplished, would have been laughed at as a madman.

I believe that we are on the eve of a great re-action in these departments of our profession, and that the next *decade* will develop many marvelous changes in our knowledge of therapeutics, in which practical medicine will become more demonstrative and less theoretical than heretofore.

The recent experiments made by Dr. Hughes Bennet and others on *animals*, prove almost conclusively that mercury does not increase the biliary secretions, and yet this specific effect has been accorded to this agent more confidently than to any other article of the materia medica.

Without espousing the conclusions of these eminent scientists, it seems proper to assert that what the times, and the enlargement of our professional knowledge demands, is a more systematic and scientific effort to determine the true therapeutical relation of certain medicinal agents with reference to modern discoveries in physiology and pathology; or in the language of another, "what we require is not unfounded assertion and vague speculation, but positive knowledge, something that will contribute to the science of therapeutics a more certain and less conjectural character."

I approach the second part of my subject with some hesitation, for it becomes necessary in defining the character of some of the representatives of our profession, to animadvert on certain practices that tend to lower them in public confidence, and expose them at times to seemingly merited censure. While the modern practitioner does not parade, as in former times, such fantastic *insignia* of his office, as the powdered wig and gold-headed cane, nor affect a profound mystery while administering simple rhubarb pills or magnesia powders, yet, there are those who bid for public notice as the especial champions of some popular remedy, such as cod liver oil, or carbolic acid, or the hydrate of chloral, and laud these as the universal panacea for the cure of "the ills that flesh is heir to."

Can we refrain from condemning the inexperienced specialist, who, upon the mere suspicion of metritis, or other uterine disorder, rushes to the use of the speculum, in wanton disregard of the most delicate sensibilities, a procedure which the honorable physician will only resort to when a correct diagnosis imperatively demands it. And have we not occasion to lament the too prevailing practice of professional experts appearing as medico-legal witnesses in courts of justice, who, for a valuable consideration, will discover a convenient *frenzy* as a justification to shield a criminal, and thwart justice?

And if you will permit a single word of criticism more, have we

not sometimes reason to fear that the advertising in the public prints of cases treated and of skillful surgical operations performed, may be derogatory to professional dignity and honor?

Gentlemen, I would not have you think that I have no admiration for our profession because I have made mention of some of the causes which in my opinion impairs it in the public confidence, I still believe it noble in all its efforts to alleviate human suffering.

And while it may have its dark spots, like the great luminary of the universe, yet, like the sun, it warms and vivifies nature into bloom, health and beauty.

That modern medicine, by its science of hygiene in preventing disease and in promoting the longevity of the human race, is entitled to more confidence and esteem than is commonly awarded to it by the people of civilized communities, only those persons who have lived in foreign countries, as in China or Japan, can rightly estimate or appreciate.

The assertion which we frequently hear that medicine is not one of the exact sciences, is not to be wondered at when we contemplate the vastness and magnificence of the laws that govern the human body, as well as the minutia of the cells that constitute its tissues. And the science of modern chemistry, in its adaptation of its resources to such conditions, takes so wide a range that the Greek alphabet might be exhausted for numerals to express the variety of substances which can be formed. Berthelot makes a calculation of the number of combinations with acids of certain alcohols. "He says if you gave each a name, allowing a line for the name, then print 100 lines in a page, and make volumes of 1,000 pages, and place a million of volumes in a library, you would need 14,000 libraries for your catalogues."

Surely such a science might be said to approach the infinite, and to be above the comprehension of finite man, and to demand the formation of special departments of study, these to be multiplied by the thousand, and then, after patient years of investigation, we should fail to comprehend all that may be evolved from so illimitable a field.

Does it not then become the representatives of a profession with such a career of discovery and usefulness before it to discard all effete ideas and charlatan practices? And then may we not hope to elevate the profession of medicine so that it may stand before the world like a temple illuminated in every part, and not resemble a house which reflects light from only a single apartment?

In closing, allow me to congratulate you upon the interest and zeal

which have been manifested in our society during the past year. Besides the semi-annual meeting, there have been held twelve other meetings in the evening, usually at intervals of two weeks, the average attendance at which was twenty-nine. Although so frequently occurring, a decided interest was manifested in them from first to last. This interest was shown not only by the number of members present, but also by the numerous reports and the great variety of subjects that were discussed, relating to the different departments of medicine and surgery, as well as to medical ethics. In the number and character of the reports of medical and surgical cases there has been a decided improvement over any previous year. Indeed, during these meetings, between seventy and eighty cases have been presented, most of them in detail, and accompanied with pathological specimens. Many of these reports were the occasion of useful and interesting discussions.

I have still a painful duty to perform. All are not here to day who were with us a year ago. We miss the familiar face of our associate, Dr. Alfred Wands, of Cohoes, an old and esteemed member of this society. Although I had known Dr. Wands for several years, yet my relations with him were not as intimate as with many of our brethren of Cohoes, where he spent most of his professional life, and succeeded in building up a large practice, and enjoyed the confidence and esteem of all who knew him. His death in the prime of life is the cause of sincere mourning, and has severed ties to family, profession and community which can never be restored.

ARTICLE VII.

Trismus Nascentium. By JAMES S. BAILEY, M. D., Albany, N. Y.

Trismus nascentium, or the lock-jaw of new-born children, is a disease that occurs in nearly every climate, and in all quarters of the globe. Its greatest mortality seems to be in the warm climates of both hemispheres.

According to Dr. Holland and Sir George Mackenzie, it is very destructive to infants in the islands of Himacy, on the southern coast of Iceland; also St. Kilda, the most distant of the western islands of Scotland.

We find it prevailing alarmingly in the islands of Minorca and Bourbon in the West Indies, in the equatorial regions of South America, also in the southern portions of the United States.

Dr. L. S. Grier, of Mississippi, states, in the *New Orleans Medical and Surgical Journal*, May, 1845: "The first form of disease which assails the negro among us is trismus. The mortality of this disease alone is very great. No statistical record, we suppose, has ever been attempted, but from an individual experience, we are almost willing to affirm, that it decimates the African race upon our plantations within the first week of independent existence.

"We have known more than one instance in which, of the births for one year, one-half became victims of this disease, and that too in spite of the utmost watchfulness and care on the part of both planter and physician. Other places are more fortunate, but all suffer, more or less, and the planter who escapes a year without having to record a case of trismus nascentium, may congratulate himself on his being more favored than his neighbors, and prepare himself for his own allotment, which is surely and speedily to arrive."

Trismus is now rarely observed in temperate climates, except in foundling and lying-in hospitals. According to Dr. Joseph Clark's statement, in a paper read before the Royal Irish Academy, in 1789, on its occurrence in the Dublin Lying-in Hospital, up to 1782, of 17,650 infants born alive in that institution, 2,944, or about seventeen per cent, perished within the first fourteen days from birth.

It is the chief cause of depopulation in the colonies of Demarara

and Essequibo, the mortuary statistics being, of this disease, about one per cent of all that are born.

It is an interesting fact, that however remote the places of attack and conditions of climate, there is a great similarity in the habits of those who suffer. In the southern States, its victims are chiefly negro infants, and among those that are filthy and low in their habits, and from choice or necessity are insufficiently nourished, and neglectful of sanitary hygiene.

Mr. Maxwell observes, in relation to the West Indies (*Jamaica Physical Journal*, copied in the *London Lancet*, April 11th, 1835): "From observations I have made for a series of years, I found that the depopulating influence of trismus nascentium was not less than twenty-five per cent. It scarcely has a parallel within the bills of mortality."

Dr. V. N. Wooten (*New Orleans Medical and Surgical Journal*, May, 1846) states, that trismus nascentium is of fearful frequency on the cotton plantations of his section of Alabama. He remarks, "I am not prepared to compare it to other maladies in respect to frequency, but I believe that it destroys more negroes than any other single disease."

In many places, trismus nascentium seems to prevail epidemically during certain seasons, and in many localities attacking and causing the death of more than half of the newly born infants. At one time, every sixth child born in the Dublin Lying-in Hospital died during the first fortnight after birth, and trismus caused the death of nineteen-twentieths of them all. The mortality decreased by improved ventilation and prophylactic measures, adopted by Dr. Clark, to one in nineteen cases. During Dr. Collier's administration, between the years 1826 and 1833, but little more than the ninth part of the mortality resulted from trismus.

Dr. Wooten says, "Sometimes I have found it of such frequent occurrence as to present the appearance of an epidemic."

Dr. Wm. O. Baldwin (*American Jornal of Medical Science*, 1846, page 365) remarks, "Trismus nascentium, although especially a disease of tropical climates, is not only met with in every climate, but in every season coexisting with tetanus in the adult."

Dr. M. Ransom communicates to Dr. J. M. Watson extracts from his case book, while practising in Texas, on the Brazos, during 1849: "According to the best information obtained from citizens, it did not prevail before 1845, and since then it has increased every year." He speaks of the mortality having been very great, "amounting in one or two instances to four-fifths of the children born on these

plantations, while on many others not one case occurred. On plantations where it had occurred, the mortality was about one-half.

Dr. Reher makes this statement (*Boston Surgical and Medical Journal*. 1869, copied from the *Medical Times and Gazette*): "Dr. Busch, of Elbing, Prussia, has observed that fatal cases of trismus were occurring with great frequency in his practice, he having had twelve cases in three and a half years. On inquiry, it was found that other practitioners had met with similar cases; together, the doctors recorded thirty-seven cases from 1863 to 1865, in a population of 2,700. These cases were found to have been the infants of mothers attended by one and the same midwife, the one most employed in the place. Upon being questioned, she gave a more alarming statement, by saying, many had died before there was time to send for a doctor. She admitted that in 380 cases of confinement she had attended during 1864–65, she had met with ninety-nine cases; every third or fourth child dying of trismus.

The Period of Commencement

Of trismus, or the time which transpires from the exposure to the cause until the attack commences, is of much importance as respects the explanation of the manner in which the cause acts, and in the employment of prophylactics, or means calculated to prevent the development of this disease.

The interval of its duration is exceedingly various, and is most commonly estimated from one to fourteen days. It most frequently occurs from the fifth to the fourteenth day.

Dr. Robert Finckh (*Hecker's Annalen*, Vol. 3, No. 3, page 304), reports as occurring in the Stuttgard Hospital, between the years 1828 and 1835, twenty-five cases among 848 infants admitted. One case occurred on the second day after birth; eight cases on the fifth, and seven on the seventh day.

Dr. W. B. Lindsay (*New Orleans Medical and Surgical Journal*, 1846), mentions one case attacked on the eleventh day.

Dr. P. C. Gaillard mentions two cases treated by himself, one occurring upon the ninth, and the other upon the seventh day.

Dr. Thomas Lipscomb, of Shelbyville, Tenn. (*Nashville Journal of Medicine and Surgery*, 1852), mentions a case occurring upon the ninth day.

Dr. Copland (*Medical Dictionary*), says it generally commences in the first seven or nine days after birth, and rarely later than the fourteenth day.

Dr. Clark states out of 17,650 children admitted in the Dublin Lying-in Hospital at the expiration of 1782, that 2,944 infants died of trismus within the first fortnight from birth.

Dr. West (*Diseases of Children*) remarks: "I once saw it attack a child fifteen hours after its birth, but in the others it did not commence until after the sixth day. These cases occurred in the Dublin Lying-in Hospital."

Dr. Snead (*Virginia Medical and Surgical Journal*, April, 1853) mentions one case as occurring on the eighth day.

Dr. Greensville Dowell (*American Journal of Medical Science*, January, 1863), who has practiced many years in Mississippi and Texas, says it attacks between the fifth and twelfth days.

Dr. Schneider's experience is that the disease occurs more often between the second and seventh day, and rarely after the ninth day.

Prof. Cederschjold, of Stockholm, in 1834 treated forty-two cases. They usually commenced between the ages of four and six days.

Riche, in Stuttgart, in forty-two years' practice, observed 200 cases and never found it to commence before the fifth, rarely after the ninth, and never after the eleventh day.

Dr. C. Levy, of Copenhagen, reports six cases. Two began on the third, two on the fifth, and two on the sixth day.

Dr. Thomas C. Black, in a communication to Dr. J. M. Watson, says: "The cases which I have seen occurred invariably from the fifth to the tenth days, after the falling of the cord."

From facts obtained from the writings of experienced observers, and from my own experience in this disease, I am of the opinion that trismus nascentium attacks most usually during the first week after birth, and very rarely after the second.

SYMPTOMS.

The commencement is many times so gradual as to escape the observation of the unsuspecting parents. The first symptoms noticed are that the child seems languid, moans, is quite restless, and occasionally utters a whimpering cry, and when an effort is made to nurse, it does not take hold of the nipple, although seemingly anxious to do so.

The angles of the mouth are drawn down and backward, which gives a peculiar expression to the countenance, as if attempting to smile. If the jaws are then examined there will be more or less rigidity of the masseters. The jaws will be more or less firmly fixed, and any attempt to insert the finger or nipple will increase the

rigidity. In a few hours the muscles of the limbs and trunk will be involved.

Sometimes the attack commences with a complete spasm, but it more frequently follows than precedes the trismus.

The spasms usually occur at irregular intervals, and are often produced by apparently inadequate causes, as a slight noise or the lighting of a fly upon the face.

The pathognomonic spasms of trismus nascentium are not fully developed in the beginning, but by degrees are each muscle affected, so that the greatest rigidity is not obtained for several hours, and during the interval the limbs can be bent and the jaws pressed open, but not without painful spasms. The agitation sometimes is very great, commencing with a scream, foaming at the mouth, and with considerable interruption in respiration, the thumbs are firmly fixed in the palms of the hand, the fists are tightly clenched, the feet are forcibly flexed upon the ankles, with the great toe widely separated from the others, and the head is thrown backward as in opisthotonos, and held in position by the spasm of the cervical muscles. The surface becomes of a livid hue, the mouth is generally slightly open, but the jaws are fixed, and deglutition, which at first is difficult, soon becomes impossible, and the infant either dies during a paroxysm or sinks into a comatose condition and expires.

The cry of tetanic children is peculiar, never loud. The spasmodic condition of the respiratory muscles causes the suppressed cry.

The character of the pulse varies exceedingly in individual cases and in different stages of the disease. Sometimes it is accelerated, but more often it is slower than in health, and in a few cases it is normal.

Alimentation is always deficient. The appetite does not seem to be impaired, but any effort at nursing brings on a spasm, and so does any attempt to feed it.

The rapid wasting so often observed by physicians is produced by a lack of nutrition. Dr. Lindsay, in the *New Orleans Medical and Surgical Journal*, 1846, speaks of a case that was fat three days before the attack, but then was emaciated, and its face looked old and wrinkled.

Dr. R. H. Chinn, of Brazoria, Texas (*New Orleans Medical and Surgical Journal*), also speaks of the rapid emaciation.

Romberg, who treated trismus in European hospitals, also refers to this fact.

There is no uniformity in the condition of the bowels. Dr. Lind-

say speaks of the dejections as being yellowish and like curdled milk, and afterward black.

Dr. Meriwether says there was disturbance with the bowels; the passages were generally greenish and ill looking; others describe the stools as being greenish and slimy. According to my observations the bowels usually move frequently, and the stools are liquid, though sometimes the bowels are constipated.

Duration of Fatal Cases.

Dr. Robt. Finckh's (*Hecker's Annalen*, Vol. III) observations in eighteen cases in Stuttgart Hospital terminated as follows: Fifteen cases within two days, two cases in five days, and one case protracted to a week.

Dr. Wm. O. Baldwin (*American Journal of Medical Science*, 1846) remarks, the disease terminates in from six to forty-eight hours, most often in about thirty to thirty-six hours.

Dr. P. D. McCullock, in a communication to Dr. J. M. Watson, says five cases died within ten days of their birth.

Dr. Snead (*Virginia Medical and Surgical Journal*, April, 1853), mentions a case remarkable for its duration; the child died on the eighteenth day.

Dr. Copland (*Medical Dictionary*) speaks of the acute form as terminating life in ten to thirty hours; subacute form frequently terminates in three, four or five days, but may be prolonged to eight or nine days.

Dr. Clark mentions the fact that in the Dublin Lying-in Hospital seventeen per cent of the children born in that institution, died of trismus within the first fortnight from birth. When trismus prevailed epidemically in the Stockholm Hospital in 1834, it seldom lasted more than two days. According to Romberg, it generally lasted from two to four days, but its duration at times, was limited to from eight to twenty-four hours, and occasionally, though rarely, it extended from five to nine days.

Dr. Underwood, in his record of cases treated in the Dublin Lying-in Hospital, mentions one that lived six weeks, while others died in the same institution as soon as the third day. In (Vol. V, *New York Medical Record*) three cases of trismus occurring in this city, during the last four years, reported by myself, one case died four days after the attack, one in eight days, and one in seven.*

* During my residence in Texas, on the Brazos, I collected upward of 200 cases of trismus, and made notes from them, but owing to the excitement of war, and my removal north, they cannot now be found, I, therefore, will not attempt to refer to them from memory.

Favorable Cases.

Dr. Robert S. Bailey (*Charleston Medical Journal and Review*, November, 1848), mentions one case, taken when three days old and recovering in a few days.

Dr. Wm. B. Lindsay (*New Orleans Medical and Surgical Journal*, September, 1846), refers to a case taken at eleven days old, and recovered in fifteen days.

Dr. P. C. Gaillard (*Charleston Medical Journal and Review*, November, 1853), taken when ten days old, recovered in thirty-one days; taken when eight days old, recovered in twenty eight days. *Ibid.*

Dr. Augustus Eberle (*Missouri Medical and Surgical Journal*, 1847), taken at seven days old, and recovered in fifteen days.

Dr. Furlong (*Edinburgh Medical and Surgical Journal*, January, 1830), taken when eight days old, and recovered in four weeks.

Dr. J. Marion Sims (*American Journal of Medical Science*, April, 1846), taken when one week old, and recovered in two days.

Dr. J. Lewis Smith, taken at the age of three days, recovered in five weeks.

The Cause.

The cause of this infantile disease, by most writers, has been very differently assigned. Some have attributed it to the division of the umbilical cord, and to its subsequent treatment. Hence it has been regarded as infantile traumatic tetanus, by others as symtomatic, caused by deficient ventilation and vitiated atmosphere. Retained meconium and morbid secretions in the primæ viæ, have been insisted upon by others as causes.

In the West Indies it has been imputed to excessive irritating purgatives after birth. Exposure to cold and drafts of air have been also assigned.

Dr. West (*Diseases of Children*) observes the remarkable frequency of the disease in hot climates, when the heat of the day is succeeded by intense cold at night, favors the opinion that interruption of the functions of the skin, by sudden alternations of temperature is a fearful cause of this disease.

All of these causes have been disputed; it is most probable that more than one is necessary for its production. Infants in certain localities during certain seasons, seem most predisposed. Dr. Clark's statement in reference to the disease, as it occurred in the Dublin Lying-in Hospital, is of itself conclusive evidence, that contaminated

atmosphere is concerned in its development, and the mortality was reduced from seventeen, to five per cent by improved ventilation.

In some portions of the southern States, and in the West Indies, a large proportion of the new born, die of causes such as sudden and frequent change of atmosphere, want of cleanliness, bad ventilation and irritant dressings to the umbilicus.

Hereditary causes as well as that of location may be enumerated. On the southern coast of Iceland, where fish and the eggs of sea fowls constitute the only diet, this disease prevails, causing some to think that diet is a predisposing cause.

Dr. Wooten and others, attribute trismus to irritation in the umbilical cord from bad management. While Drs. Colles, Levy and Busch, ascribe it to inflammation of the umbilical arteries.

Schneider believes malaria to be a strong predisposing cause, and thinks it so acts, by depressing the nervous system. Cold also acts thus. He mentions as an illustration, that horses frequently contract tetanus when very warm, by being caught in a rain storm.

Dr. Hodges concurs in the opinion of malaria acting thus, also regards want of cleanliness a predisposing cause.

Dr. J. M. Watson (*Nashville Journal of Medicine and Surgery* 1851) remarks, a traumatic tetanic condition of the umbilicus, is with few exceptions, the constant exciting cause. Of eighty-six infants examined by C. M. Baillard, nineteen had redness and tumefaction of the umbilicus, without suppuration.

Dr. Thomas Lipscomb, of Shelbyville, Tenn. (*Nashville Journal of Medicine and Surgery*, 1852), gives a case that was attacked upon the ninth day, the funis had separated on the fifth day, and the umbilicus was apparently healed, until after the child was spasmodically seized. It then exhibited a little tumefaction and one raw point.

Dr. Copland thinks tetanus is essentially irritation of the excito-motory centers, and often occurs from irritation acting directly upon their centers, while others are purely toxicological. Their pathognomonic states are brought about by agents, acting indirectly, as they are situated far remote from external agents, and the stimuli reaches them through the medium of the sensory nerves. The reflex action of the nervous system in infancy is easily excited, particularly through the medium of cold. The observations of most physicians agree upon this point.

Dr. Finckh thinks it impossible to refer the disease to congenital malformations or weakness. According to his observations, those affected were born at full period, were well developed, and vigorous.

The doctor regards as immediate causes of trismus, suppuration and ulceration of the navel; as occasional causes, atmospheric influences, cold, gastric irritation, and mechanical stimuli. He thinks it is produced by a congested and inflammatory condition of the central nervous system, and essentially the same as traumatic tetanus of the adult.

In Germany physicians have remarked that cases of trismus abound in such districts as are deprived of parish churches, and are more rare in villages where the proximity to churches enable parents to have their children readily baptized.

Dr. Finckh's observation show that any exposure to cold, especially during the cicatrization of the navel, is apt to produce trismus.

Dr. J. Marion Sims (*London Lancet*, 1848) thinks that trismus nascentium is a disease of centric origin, depending upon a mechanical pressure, exerted on the medulla oblongata and its nerves; that this pressure is the result most generally of an inward displacement of the occipital bones often very perceptible, but sometimes so slight as to be detected with difficulty; that this displaced condition of the occiput is one of the fixed physiological laws of the parturient state; that when it persists for any length of time after birth, it becomes a pathological condition capable of producing all the symptoms characterizing trismus nascentium, which are instantly relieved simply by rectifying the abnormal displacement, and thereby removing the pressure from the base of the brain.

Dr. Nicholas Meriwether, Montgomery, Ala. (*American Journal of Medical Science*, 1845), thinks that the disease is caused by the absorption of pus by the umbilical vessels.

Dr. Thomas C. Black, in a communication to Dr. Watson, thinks it is produced by unnatural cicatrization of the umbilicus, and thought he could in most cases trace the disease to bad management of the cord.

Dr. Baldwin (*American Journal of Medical Science*, 1846) believes it generally, if not always traumatic, and its exciting cause located in the navel.

There are few diseases in which so wide a difference in opinion exists respecting its cause as trismus nascentium, and consequently its treatment must approach empiricism. Each physician carrying out his own peculiar and imperfect ideas.

The well known fact that tetanus of the adult, produced by external injury, usually appears about the ninth day, while infantile trismus, often occurs upon this day (hence the name nine day fits); we would

naturally suppose that local injury, likewise, was the exciting cause. It is now conceded that the state of the umbilicus, has much to do with it, though other conditions and surroundings, may have their influence, such as damp and cold atmosphere, impure air, and high temperature.

Malaria, the fruitful source of so many maladies, may be a strong predisposing cause by producing cerebro-spinal irritation, or irritation of some of the ganglionic nervous centers.

This view is apparently supported by the fact, that trismus so frequently prevails where miasmatic diseases abound. The cachectic condition of the mother, superinduced by malaria, may assist in its production.

The causes of trismus may be considered as predisposing and exciting. Anything that impairs the general health of mother or child, may cause a predisposition to this disease. An abnormal condition of the funis may also act in this way. If the cord does not desiccate, and drop off in the usual length of time, as, for example, does the stem of a fully ripe melon, it must decompose, and, by its fetid discharge, create irritation and inflammation. It is estimated that the time for separation of the funis from the child should take place between the third and seventh day. If this healthy process, should be delayed a pathological condition must be established, calculated to induce trismus.

Dr. Finckh (*Hecker's Annalen*, Vol. III) remarks: "In the majority of cases, a coincidence exists between the separation of the cord, and the development of tetanus. Thus the cord was separated fourteen times before the appearance of spasms; nine times during, and only twice after, their commencement.

Dr. Wm. O. Baldwin (*American Journal of Medical Science*, 1846) remarks: Most generally, the disease attacks about the ninth day. This is about the time for tetanus to develop after the reception of wounds. A fact which cannot be reconciled, except with the view of its traumatic origin, is that tetanus nascentium always supervenes within the time of the dropping off of the cord, and the time which we would reasonably allow for the perfect and healthful cicatrization of the umbilicus. In my experience, since 1853, I have never observed a case of lock-jaw, when due regard was paid to proper instructions, in reference to the management and dressing of the umbilicus. My extreme desire to avoid this great outlet, to infantile mortality, has caused me to examine personally at each visit, the state of the navel, in order to see whether the instructions were respected, and that no

abnormal condition was established. In the brute creation, we do not see this morbid condition manifest. The funis at birth is torn asunder, and the portion attached to the fœtus, desiccates as has been described, and no trismoid symptoms have followed, while the parent might be quite as liable to traumatic tetanus, induced by wounds, as the human specie. Malaria or any other cause that would tend to impair the general strength and health of the mother might act thus.

It is reasonable to suppose, considering the intimate relation existing between mother and fœtus, during gestation, that the child's vigor and vitality would be in proportion to that of the mother, and that the children from enfeebled constitutioned mothers, would be more pre-disposed to that disease, than those born from more robust parents.

With few exceptions, the condition of the umbilicus is the constant exciting cause. Tumefaction and redness without suppuration, should always excite apprehension. It is possible, however, for this condition to exist without its being followed by trismus, and lock-jaw may occur without inflammation, externally, of the umbilicus.

In the majority of cases coming under my observation, the external appearances of inflammation have been strongly marked. Among negro infants, unsuitable dressings are by far the most common exciting cause. We frequently find napkins, bandages and umbilical dressings, wet from morning till night. They are not only fetid with the ammoniacal smell of urine, but loaded with fæcal matter, so thoroughly saturating the appendage of the funis, as to render its drying impossible. In consequence of the sphacelated condition of the parts gives off the material of death and decay, which being deposited in direct contact with the active absorbents, must necessarily act as a fearful causation.

Bad and improper dressings, after the separation of the cord, is another cause; coarse rags are frequently applied to the unhealed surface, and, if not under the supervision of some intelligent nurse, in order to check the formation of pus, nine cases out of ten will be dusted with soot mixed with ashes, or wads of scorched cotton lint will be tightly bound over the raw surface; the torture excited by such treatment, keeps a constant motion of the child and irritation of the umbilicus. Bad diet has a similar effect by creating colic, exciting uneasiness and consequent displacement of bandage.

Tension and tearing of the umbilical cord has also been considered as an exciting cause.

A case having occurred in my practice within the last few months,

fully illustrates that it sometimes acts thus. The introduction of the following case will not be out of place. In the absence of the family physician, a gentleman called upon me, in great haste, stating that his wife was about being confined. When I arrived, I found the infant was born and that only one or two pains had been necessary for the accomplishment of birth, as the fœtus was small, and the capacity of the mother's pelvis great, the child had shot like an arrow through the part, and was entirely away from the mother at full length of the cord. Upon examination, I distinctly discovered rents, produced by direct strain upon the funis. After giving the mother and child the necessary attention, the case was surrendered to the family physician. In the course of forty-eight hours, I was not surprised to learn that the infant had been attacked with trismus, and that in twenty-four hours more, it had perished from the same cause.

SUSCEPTIBILITY OF RACES.

Much has been said of the susceptibility of negro infants to trismus, and of the comparative exemption of white children. According to my observation this is not the case, both races are equally liable to the disease with the same attention and equal exposure. That more cases usually occur among negroes, owing to the preponderance of the black population (particularly in the southern parts of the United States, where my observations have been made), because this class do not receive the same amount of care as white children.

Dr. M. Ransom states, that while the mortality among negroes on two plantations in his neighborhood, on the Brazos, was four-fifths of the children born, the mortality among white children was comparatively small. The average mortality on places where it did occur was fifty per cent.

Dr. J. C. Nott (formerly of Mobile, Ala., but more recently of New York city), writes: "With regard to the comparative frequency of this affection in the white and black races, I can only say that, according to my observation, to statistics, and to writers in the West Indies, it is more frequent in blacks than whites. Whether the comparatively rude handling of negro children by ignorant midwives had anything to do with it I cannot say; I think, however, *races* have something to do with it, or it is, according to my observation, more common in blacks than in the white *laboring class*. Trismus nascentium, in my observation, is very rare in the whites of the *upper class*. In Mobile, if my memory serves, the number of cases was fifteen to twenty a year, and those were almost wholly in the lower class."

Dr. J. L. Irion (Montgomery, Texas), expresses the opinion that negroes are more liable than white infants.

Dr. P. D. McCullock writes to Dr. Watson and speaks of the fatality among negroes in two families representing the largest proportion of deaths from trismus. When the dressing of the navel was attended to by members of the white family, there were no deaths from this cause, and white children were born on these plantations without contracting trismus.

Prof. Hodge has seen but few cases in a practice of thirty years, and these cases occurred entirely among the laboring and filthy classes.

Dr. Copland (*Medical Dictionary*) remarks: "It is most frequently met with among the dark races."

Dr. Thomas C. Black states, that in his experience a large proportion of cases were among negroes.

Dr. Wooten says: "I have never seen a white child afflicted with this disease."

The editor of the *New Orleans Medical and Surgical Journal*, 1846, observes: "We may remark again that the affection is by no means confined to colored children in New Orleans, but is occasionally met with in the most respectable families.

Dr. Frank A. Ross (*Transactions of the Medical Association of the State of Alabama*, 1870), in the report of the diseases of Mobile, Ala., gives the summary of deaths from trismus in that city from March, 1869, to March, 1870, which is as follows:

	Whites.	Blacks.	Total.
March	0	0	0
April	2	3	5
May	0	1	1
June	2	3	5
July	2	0	2
August	0	2	2
September	4	0	4
October	0	2	2
November	0	3	3
December	0	1	1
January	0	4	4
February	2	1	3
	12	20	32

"The white population of Mobile is about three and one-half times more than the black, and yet out of 1,202 deaths, 644 are negroes." Since this is the case, it is not surprising that more negro infants, with the care they usually receive, fall victims to and perish from trismus nascentium.

DIAGNOSIS.

Few diseases are so easily diagnosed as trismus nascentium. To one who has ever seen a case the symptoms are well marked and easily recognized. The intense rigidity of the voluntary muscles with alternate exacerbations, aggravated by trivial causes, together with the spasmodic closure of the jaws, difficult deglutition, and the peculiar expression of the countenance are in themselves pathognomonic.

PROGNOSIS.

The prognosis of trismus nascentium is always unfavorable. Few cases recover. The united testimony of experienced physicians do not differ upon this subject. Mr. Morrison, who practiced for several years in Demarara, has never known one case to recover.

Dr. Wooten says: "I never saw a decided case of trismus that did not prove fatal."

Dr. Ransom says: "I have never known a recovery from a well marked case of this disease."

Dr. Thomas C. Black remarks: "I have never seen a well marked acute case get well."

Drs. Rush, Fourcroy, Valentine, Dacelle and Campet say it is always a fatal disease. According to Dr. Holland and Sir George Mackenzie, it is destructive to all the infants born on the island of Himacy.

Dr. D. B. Nailer (*New Orleans Medical and Surgical Journal*, 1846) says: "About two-thirds of the deaths among negro children are from this disease, and so uniformly fatal is it that a physician is never sent for."

Dr. S. L. Grier (*New Orleans Medical and Surgical Journal*, 1854) remarks: "We have known more than one instance in which of the births for one year, one-half became the victims of this disease, and that, too, in despite of the almost watchfulness and care on the part of planter and physician."

My own experience during a period of eighteen years in New York, Alabama and Texas, in this disease, is decidedly unfavorable, having

never seen a case recover; and cases that have been reported as getting well that have come within my knowledge were not well marked cases, but infantile spasms produced from other causes.

Yet undoubtedly cases of trismus do occasionally recover. Dr. J. Lewis Smith has collected eight cases which recovered, and according to the evidence were genuine cases of trismus nascentium.

External Appearances.

There seems to be quite a uniformity of external appearances after death. Finckh says, in speaking of twenty-five cases examined after death by him in the Stuttgart Hospital: The face retained its characteristic appearance of suffering; the muscular system its rigidity; the fingers and toes were powerfully contracted, and the umbilicus was surrounded by a large circle of a green or a bluish green color.

Dr. Colles (*Lectures on Surgery*) remarks: "I have always found that the navel string, whether it had separated or not, had left an ugly foul ulcer behind it."

Dr. Winterbottom (*History of Diseases of Africa*) says: "When death occurred on the fifth or sixth day the sore was frequently in a raw state. I never yet saw it in a sphacelated condition.

Dr. W. B. Lindsay and others speak of the rapid emaciation caused by trismus. "A child fat three days previously looked old and wrinkled."

Dr. Meriwether says: "In all the cases I have seen there was an unhealthy appearance of the navel."

Dr. Snead remarks: "It was observed that the wound caused by the division of the cord was still open and inflamed."

Mode of Death.

Death in trismus nascentium may occur from asphyxia, apoplexy, extreme cerebral congestion, or from exhaustion. The latter mode seems to be the most frequent. There are cases that undoubtedly die from apnœa, from spasmodic closure of the glottis during the paroxysm.

Morbid Appearances.

Dr. Robert Finckh made twenty *post mortem* inspections in the Stuttgart Hospital. Most of the bodies were examined thirty-six hours after death, and, in order to prevent deceptive appearances, they were placed on the abdomen to prevent the gravitation of the blood. In four cases the spinal marrow and its membranes were not altered.

In the sixteen remaining cases there was an effusion of blood in considerable quantities between the bony walls and the dura mater, the whole length of the canal. In nine of the sixteen cases the dura mater and arachnoid were perfectly healthy, but the pia mater was thickened and evidently inflamed. The blood in these cases was very dark: sometimes fluid, at other times coagulated. The spinal marrow was firm and normal, in nine cases accompanied by inflammation of its membranes. In one case the brain and membranes were unaltered. In the nineteen remaining cases, in the interior or on the surface of the brain was found more or less extravasated blood. In five cases abnormal appearances were manifested in portions of the intestines by strong contractions, while the others were distended with gas. There was no lesion in the umbilical vessels in eleven cases. The nerves and their plexuses were healthy.

The substance of the brain commonly was a little soft, otherwise presented nothing abnormal.

The cerebellum was in a state of complete softening.

Dr. V. N. Wooten (*New Orleans Medical and Surgical Journal*, May, 1846) states he has made *post mortem* examinations in several cases, and found the pathological appearances as uniform as in any other disease, as follows: Inflammation and vascular engorgement of peritoneum; a circumference of from one to three inches around the umbilicus was in a gangrenous condition, liver congested, substance and lining membranes of the base of the brain, and the medulla oblongata were engorged, also cervical portions of spinal marrow.

Dr. W. O. Baldwin (*American Journal of Medical Science*, 1846) expresses the opinion, that spinal lesions are generally observed in trismus nascentium.

Dr. Goëles, of the Foundling Hospital, Vienna, frequently found increased vascularity in the substance and in the membranes enveloping the upper part of the spinal marrow.

Dr. Thompson, of Philadelphia (*Curling on Tetanus*, *p.* 109) observed the same.

Dr. J. Marion Sims found on dissection in a negro infant, who died of trismus, a coagulum of blood occupying the spine its whole length, enveloping perfectly the medulla spinalis, thickening as it approached the base of the brain, superficial vessels full of black blood, particularly posteriorly. There was nothing else remarkable.

Dr. Baldwin, in 1846, observed: "I examined the body of a well formed and fully matured male negro infant, who died with tetanus nascentium, after its sixth day. Autopsy seven hours after death. The

body was generally flexible, toes and fingers firmly clenched, the umbilicus enlarged, hardened, and a portion of the surface to which the cord was attached looked dry and red. The cuticle was denuded in two small places about half an inch from the umbilicus; membranes, and substance of the brain natural. Dr. Sims being present thought it the most bloodless brain he ever saw. A thick and very firm coagulum of blood was found covering the lateral surface of the medulla spinalis and extending the whole length of the spinal column."

Dr. Colles (*Edinburgh Medical and Surgical Journal*, Vol. 15, 1819,) published his observations during a period of five years, made in the Dublin Lying-in Hospital. He had witnessed from three to five cases each year, and they were as follows: The skin around the edge of the umbilical fossa was in some more elevated than usual. When the borders of this hollow were expanded by introducing a pair of dissecting forceps, he observed in the center of this fossa a large papilla. The floor of the umbilical fossa was lined by a membrane formed by suppurative inflammation. In the vicinity of the umbilical vein in some instances were marks of superficial ulceration. The peritoneum covering the vein was vascular and inflamed, extending to the fissure of the liver, often, however, not more than an inch above the umbilicus. The peritoneum in the course of the umbilical arteries, which extended to the sides of the bladder, were still more inflamed. The cellular substance lying along the arteries and urachus anteriorly, was loaded with a yellow watery fluid. The inner coats of the veins were pale and without inflammation, but thickened. The arteries were inflamed, and within their coats was a thick yellow fluid resembling coagulated lymph. In all instances their coats were thickened and hardened as far as the fundus of the bladder. In every instance the ends of the umbilical vessels were pervious, and their canals were in contact with this substance. The doctor concludes by saying: "The state of the umbilicus and its vessels here described have been found in all cases I have inspected; and these appearances not being discoverable in infants of the same age which had died of other diseases, is it not a fair inference that such is the cause of trismus nascentium?"

Dr. Thompson (*Remarks on Tropical Diseases*, copied in the *Edinburgh Medical and Surgical Journal*, 1822,) observes, after having examined the bodies of several infants having died of trismus: "After the most minute examination I have not found a single morbid spot to fix a miserable theory on as to the causes that are enumerated by different authors. Taken singly they are incapable of exciting it."

Dr. Winterbottom (*History of Diseases of Africa*), remarks: "I have myself examined nearly forty cases of infants that have sunk under the complaint. In many I have looked at no other part but the navel; I have found it in all states; sometimes perfectly healed, especially if the infant had lived several days. At other times a single clean wound. When death occurred on the fifth or sixth day, the sore was frequently in a raw state; I never yet saw it in a sphacelated condition."

Dr. Colles (*Lectures on Surgery*) remarks: "I have examined several that have died of this, and have always found that the navel string, whether it had separated or not, had left an ugly, foul ulcer behind it."

Dr. West (*Diseases of Children*) remarks: "I observed an effusion of blood, either fluid or coagulated, into the cellular tissue surrounding the theca or the cord. There is generally a congested state of the vessels of the spinal arachnoid, and sometimes an effusion of blood or serum into its cavity.

Dr. S. B. Labatt, master of the Dublin Lying-in Hospital (*Edinburgh Medical and Surgical Journal*, April, 1819), published a paper entitled "An inquiry into an alleged connection between trismus nascentium, and certain diseased appearances in the umbilicus." This was designed as a reply to Dr. Colles. Dr. Labatt made eight *post-mortem* dissections, five of children dying with trismus, and three of other complaints. He seems not to have found anything that appeared to him as characteristic, but the appearances were almost directly the reverse of those examined by Dr. Colles. Neither were they materially different from those that succumbed from other maladies.

While there can be no doubt that the spinal marrow is the seat of the disease, no characteristic organic change has been found; it is sometimes not even congested.

TREATMENT.

The imperfect knowledge of the pathology, and the conflicting opinions regarding the cause of infantile trismus, has much confounded the physician; his efforts have been in vain, to find therapeutic agents to stay the ravages of this fatal malady, and we have the mortification of confessing that not any efficient remedy is within our knowledge. Anodynes, antispasmodics, relaxants, alteratives, and antiperiodics have had their place in its unavailing treatment.

Some have sought to divert it by administering calomel immediately

after birth, for several successive days, in hopes of having found the panacea, others favoring the theory of malaria, as its causation, have prescribed full doses of quinine to the mother, hoping, by the antiperiodic properties of this drug, to successfully divert it.

Dr. Jno. L. Irion, of Montgomery, Texas, in a communication to the writer, expresses the opinion that "remedies are of no avail after the disease is fully developed. Mercurial purges immediately after birth for a day or two, followed by moderate doses of quinine for several days, should be used as preventive treatment on all plantations where cases are expected to occur."

Mrs. Thomas C. Cliett, a lady living on the Brazos, in Texas, and who has seen much of trismus among her own servants, writes: "Calomel is often given as a preventive, but it has not acted thus in our family. It is my custom to direct a mush poultice to be applied to the navel immediately after the infant's birth, and to be continued until the falling off of the cord, or any sign of inflammation about it existed. With this treatment we have never lost a case. The application of the poultice became quite as necessary and common as the bandage.

If remedies are of no avail, and such seems to be the testimony of physicians, we should diligently seek to find prophylactics believing that this traumatic condition is excited by the abnormal condition of the umbilicus, our attention should be directed to this source.

Dr. Graften (*New Orleans Medical and Surgical Journal*, 1853). remarks that he has never known the disease to occur in any child whose navel had been dressed with turpentine. He makes the following application: At the first time a few drops of the undiluted turpentine is applied immediately to the umbilicus, around the cord, and it is annointed at every succeeding dressing, the turpentine being diluted one-half or two-thirds with olive oil, lard or fresh butter. Cleanliness is one of the first commands of nature, and should be strictly regarded. The general health of mother and infant should not escape our observation. Great discrimination and care, even in small things, are not unworthy of the true physician. The details of dressing the navel some have left to unskillful nurses, thinking they might excite the ridicule of the attendants, or that they might compromise their fancied dignity.

As soon as the child is born, the funis tied and severed, and the infant washed, a piece of soft and well-worn domestic or linen cloth, doubled, about four inches square, with a hole cut in its center sufficiently large to admit the cord, should be placed over it, with the

appendage turned upward, toward the child's face, and the other side of the dressing folded over it; then a flannel bandage fastened snugly around the child and over this. Every morning, after ablution, the dressings of the cord should be carefully elevated, and a feather or brush, saturated with sweet oil, should be passed around the umbilicus, in order to soften the edge of the desiccating funis, and thereby prevent undue irritation of the parts.

As soon as the cord is detached, the parts should be cleansed as often as necessary with castile soap and water, and a soft linen oiled cloth be kept applied over the suppurating surface, until the healing process is completed. Should undue inflammatory action be excited, these dressings should be dispensed with, and, in their stead, a soft emollient poultice of sufficient size be employed, until this condition disappears.

Dr. Wooten gives his experience as unfavorable, and says: "I have tried every plan of treatment which books or the most anxious study on my part could suggest, but all wholly in vain."

Dr. Ransom mentions recovery in a single instance, when incisions were made over the swollen umbilicus. At other times he unsuccessfully resorted to similar means; and even in this instance he doubted the salutary influence of the scarification.

Dr. Baldwin is of the opinion that local treatment of the umbilicus at the commencement of the disease is of service. His treatment consists in free incisions in the umbilicus, followed by liberal applications of nitrate of silver and bland poultices, or any application calculated to promote a healthy suppurative action in the wound.

Dr. Snead reports a case of unsuccessful treatment, which was as follows: Mercurials and opiates were used until the third day, when slight narcotism was observed, but no relaxation had occurred. Opium was continued and drastic purges given every other day; the child died on the 18th day, having been sick nine days.

Dr. Gaillard (*Charleston Medical and Surgical Journal*, 1854) reports two cases, treated by Dr. De Saussure and himself, cured by cannabis indica.

The infants were supported by milk drawn from the mother's breast and fed them. Large warm poultices were kept constantly to the umbilicus. Warm baths were given twice each day, and a mixture of tinct. cannabis indica, ℥ ii, camphor water, ℥ ii; dose, one tea-spoonful every two hours. For several days the child continually grew worse, until the cannabis was given every hour. The child recovered. The second case was treated nearly the same.

Dr. Williams, in the same journal, records a case of recovery by the following treatment: Chloroform and turpentine frictions were used upon the spine. He also speaks of the necessity of using the catheter, which, in every instance, should receive the attention of the attending physician.

Dr. Finckh observes: In most cases in which the antiphlogistic treatment was applied with vigor from the onset, the children died. The symptoms were alleviated for a short time by the use of warm baths. The symptoms were aggravated by local depletion. Twelve cases were ineffectually treated with opium and musk and other antispasmodics. In one case these remedies seemed to protract the disease until the thirty-first day.

Dr. Greensville Dowell (*American Journal of Medical Science*, 1863), thinks this disease may be prevented, even after the initiatory symptoms have commenced, and says: "Some slight twitching of the muscles have recovered, without any trouble, by being put into a mustard bath, washed clean, and put in a clean and well ventilated cabin." Chloroform has been used with the effect of controlling the spasms temporarily, but without curing the disease.

The Editor of the *New Orleans Medical and Surgical Journal*, 1853, thinks he has prolonged the life of infants by the use of chloroform, and mitigated their sufferings.

Dr. Meriwether (*American Journal of Medical Science*, April, 1854) says: When the disease appears endemically on a plantation, it may be arrested by having the negro houses whitewashed inside and out, by raising the floors above the ground, by removing all filth from under and about the houses, by particular attention to cleanliness in the bedding, and in dressing the child so as to prevent any of the matter from the umbilicus from lying long in contact with the skin.

Dr. Copland (*Medical Dictionary*) truthfully remarks: "Nature in many of these cases asserts her own prerogative, and carries it above the many and incongruous agents, too often irrationally, empirically, and injuriously resorted to. If we consider the diverse, or even opposite measures which have been prescribed for this malady, their apparent success in some instances and their failure in others, and their employment in different states of the disease, with little regard to the navels, or their operations in relation to pathological conditions, we necessarily must infer that recovery has sometimes taken place, notwithstanding their use, and not by their aid." The external means recommended for trismus, are quite as numerous as those prescribed internally, as ajuvants and palliatives, they are undoubtedly useful.

The humane physician should endeavor, as far as possible, to mitigate the suffering of trismoids, even when recovery seems impossible. The warm bath has many times relieved, temporarily, those painful spasms and external warmth also, many times, accomplishes, in a marked degree, a similar purpose.

Bats of carded cotton thoroughly heated and applied externally, often afford very great relief, particularly if an oiled silk jacket envelope, this retaining the insensible perspiration, producing moisture and relaxation.

In the commencement of trismus nascentium, the soothing applications to the umbilicus with the external remedies suggested, many times, are sufficient to divert an attack of this extremely fatal malady.

ARTICLE VIII.

The Constitution of Man.—A discourse delivered before the Medical Society of the County of Oneida, N. Y.; by Charles B. Coventry, M. D., Emeritus Prof. of Physiology and Medical Jurisprudence in the University of Buffalo, N. Y.

Notwithstanding the speculations of philosophers and metaphysicians we are, in our examination of the subject, driven back, as a final resort, to human consciousness, the ultimate resort in every philosophical question. We then discover the fact of our personality, and with it the correlative fact of our personal freedom, and along with it the possession of certain passions and faculties, intellectual, moral, religious and social, call them by what name we please. If it cannot be said that these faculties had a definite existence until their activity is called forth, is educated, still the power of education is present, and we then view man as a personal free agent, whose nature is made up of certain innate powers or capacities, or faculties, whose perfection consists in the harmonious action and reaction of all these faculties. The most perfect human being is where all these faculties exist, and are trained in equipoise and balanced in their activity, each of the powers being vigorous and balanced in harmony. The same consciousness that teaches us our personality and free agency, teaches us that man is so constituted that life and motion, and every thought and action are manifested through material agents; thus we see through the agency of the eye, we hear through the agency of the ear, we have the sense of touch through the agency of the nerves of the hand; and it is equally certain that the several faculties, intellectual, moral, social and religious are only manifested through the instrumentality of the brain. The eye does not see, the ear does not hear, and the brain does not think, and yet the power of seeing depends on the perfection of the eye, that of hearing on the perfection of the ear, and that of the intellectual and moral faculties on the perfection of the brain.

Prof. Tyndall says: "I hardly imagine that any profound scientific thinker, who has reflected on the subject, exists, who would not admit the extreme probability of the hypothesis that for every fact of consciousness, whether in domain of sense, of thought, or emotion, a certain molecular condition is set up in the brain. That this rela-

tion of physics is to consciousness so invariable that, given the state of the brain, the corresponding thought or feeling might be inferred; given the thought or feeling, the corresponding state of the brain might be inferred. Granted, however, that a definite thought and a definite molecular action of the brain occurs simultaneously, we do not possess the intellectual organ nor apparently any rudiment of an organ, which would enable us to pass by a process of reason from one phenomena to the other; they appear together, and we do not know why.

Were our minds so expanded, strengthened and illuminated as to be able to see and feel the very molecules of the brain, were capable of following all the motions, all the groupings, all the electric discharges (if such there be), and were intimately acquainted with the corresponding state of thought and feeling, we should be as far as ever from the solution of the problem. How are these physical phenomena connected with the fact of consciousness? The problem of the connection of body and soul is as insoluble in its modern form as it was in the pre-scientific age.*

Admitting the truth of the above proposition, it nevertheless is a matter of vast importance as connected with moral and intellectual improvement. The connection between the eye and the power of seeing, of the ear and the power of hearing, is just as inscrutable as the connection of the brain with consciousness and intellect. We know that the power of vision depends on the healthy condition of the eye; that of hearing on the ear. We know, too, that a healthy condition of the brain is necessary for healthy manifestation of mind. We do not hesitate to use means to correct disease or defect of vision, by treating the instrument, the eye, or of hearing by addressing means to the ear. So in sincerity we direct our measures to correct diseases or derangement of the brain.

Dr. James Johnson says it is by the brain or organ of intellect that man is distinguished and raised above all other animals. It is well known that the more a voluntary muscle is exercised, within a reasonable limit, the stronger and more capable of exercise it becomes. It is so with the intellectual faculties. The more these faculties are brought into play, within certain bounds of moderation, the more extensive becomes the sphere of their power. The sense of touch, of smell, of hearing, all acquire acuteness in proportion as they are exercised. The doctor might have added, that man has the same control over and the same power of strengthening, by exercise, the moral and

* Prof. Tyndall's address in the mathematical and physical section of the British Association.

intellectual faculties as he has over the muscular system or the organs of sense.

Although it is admitted that the brain is the instrument of the mind, and that insanity is only a symptom or evidence of disease or deranged function of the brain, it is still a question whether it acts as a unit in the manifestation of the various passions, emotions or feelings, or whether different portions of the brain have different functions, and that each separate faculty has its own appropriate organ, though the general mental manifestation is the aggregate of the action and reciprocal influence of all the organs acting in harmony with each other.

That different parts of the brain perform different functions, seems a self-evident proposition, for we can often tell from the symptoms, what part of the brain is diseased. If the power of locomotion is impaired without the intellect being affected, we know the disease is in the base of the brain: if the mind is impaired without affecting locomotion, we know the disease is in the anterior lobes. The strongest evidence of a plurality of organs is from injury or disease, or congenital defect of some particular faculty. In the animal creation, we find that as we ascend in the order of intelligence, there is an addition to the cerebral mass for every increase of intellect. In idiots there is usually a defect or malformation of the head; most idiots have some faculties partially developed, whilst others are entirely wanting. We occasionally see individuals, where a single faculty is wanting, without any impairment or defect of the other faculties. Thus Mr. George Comb, well-known for his intellectual abilities, says that the faculty of numbers was, in his head, idiotic, and that the multiplication table was to him an inexplicable mystery. The faculty of music is often defective or entirely wanting;* that of color, often so defective that the person cannot distinguish between a green and a red cherry by the color. The objection, that no anatomical separation of the several organs can be demonstrated, has no force when all are protected by the common covering. It is known that the cells of the brain differ in size, and why not in function. It has been objected that disease or injury of a portion of the brain, supposed to be connected with a particular faculty, did not impair or destroy the manifestation of such faculty. This objection loses its force, when we

* The late Bishop De Lancey related of himself, that when he determined to study divinity, he was told it was very important that clergymen should be able to sing, and that every person could learn; so he employed a singing master, but after a time he told him he could not learn, he had no time. Not discouraged, he tried another, but after a while he gave it up saying, he had no time; he, however, was unwilling to give it up and employed a third, but he soon advised him to give it up, saying he had neither time nor tune.

rémember that the brain is double, and that the destruction of one organ would no more destroy the faculty, than the loss of one eye or one ear would destroy the power of seeing or hearing.

Persons who contend for the unity of the intellect deny the existence of partial insanity, or monomania, though many of the ablest physiologists and psychologists admit its possibility and occasional occurrence. Bucknell, speaking of the cause of insanity, and of the want of sleep as the most frequent cause, says: "The only cases of insanity which are not reconcilable to this rule, are those which arise from the gradual development of *one mental faculty*, by frequent exercise, until the power becomes preponderating and excessive. Such cases may and do arise without, or deterioration of sleep. But are they really classed as diseases of the mind? They seem to be instances of irregular development of the mental faculties, but not of morbid change, and, in the opinion of the writer, they cannot truly be considered instances of disease, a term which implies a morbid change."—*Medico-Chirurgical Review*, for January, 1855.

Dr. Brigham says: "All the faculties of the mind should be exercised, and not one exclusively. If one subject is permitted to engage all the thoughts and feelings, other faculties and feelings become weakened, and the healthy balance of the mind destroyed, and mental derangement, usually monomania, ensues."

"In regard to the brain, the material instrument of the mind, it is less perfect from birth in some than in others. In certain individuals, the portion of the brain connected with the intellectual faculties is deficient. Where this is considerable, it causes idiocy. In others, who seem to have good intellectual organizations, there appears to be a deficiency in regard to the brain connected with the moral powers."

"Derangement of the intellectual faculties is usually obvious to all; but disorders of the feelings, affections and propensities, from disease, without intellectual disturbance, though a not uncommon form of insanity, many are not inclined to admit. But that there is a variety of insanity in which the intellect is not noticeably disturbed while the natural feelings, inclination and temper are changed and perverted by disease is a fact which can be established in every lunatic asylum."*

An able writer in the *Medico-Chirurgical Review*, says: "There no longer exists any doubt respecting the soundness of the theory that the mind is composed of several faculties, capable of acting either alone or in combination, varying greatly in power in different

* First annual report of the superintendent of New York State Lunatic Asylum, 1843.

persons, and in the same person at different times. Once we admit the theory of the separate existence, and possible separate action of the several faculties of the mind—the reasoning faculties, the emotions, sentiments and passions—and it is no more difficult to imagine a moral than an intellectual insanity. Let us only allow that the several faculties, originally of different power in different persons, may combine in different ways, and we have the material for an almost infinite variety of character; the key to an endless diversity of opinion, and the explanation of all that is most obscure in the motives and conduct of mankind."*

The brain in man may not inaptly be compared with the organ in mechanics. If the organist is concealed, we hear the music which proceeds from the instrument. The mere mechanic will search in vain for the music. He may admire the beauty of the instrument, the exquisite workmanship of the interior, and be satisfied as to the ability and skill of the builder, but he finds no traces of the music. So the anatomist may examine with the utmost care the structure and composition of the brain; he may trace every minute fiber to its origin; with the aid of the microscope may magnify every cell, and with the assistance of the chemist, may analyze and reduce it to its elementary principles, and may be satisfied that nothing short of divine power could have produced such exquisite workmanship, and yet he finds no traces of thought, of intellect, of passion or feeling; but as the organist can produce no music but by and through the instrument, so the mind in this world produces no manifestation but through the instrumentality of the brain; and as the perfection of the music depends in a manner on the perfection of the organ, so the perfection of the mental manifestation is dependent on the perfection of its material instrument, the brain. As each note of the organ has its own particular key, so each faculty of the mind has its own instrument. The metaphysician who attempts to explain or study the phenomena of mind without a knowledge of the anatomy and physiology of the brain, is like the organist who studies music without a knowledge of the instrument; whilst, on the other hand, the mere anatomist, who searches among the nerves and cells of the brain for the phenomena of mind, can only be compared to the mechanic, who expects to find among the strings and keys of the instrument the source of the music.

Bishop Berkley says: "That men have certain instinctive sensations or passions from nature, which makes them amiable or useful

* Medico-Chirurgical Review for January, 1844, page 183.

to each other. I am clearly convinced, such as a fellow-feeling with the distressed, tenderness toward offspring and affection toward friends and neighbors, are implanted in the human soul, with several other fears and appetites, aversions and desires, some of which are strongest and uppermost in one mind, others in another." He adds: "Should it not, therefore, seem a very uncertain guide in morals for a man to follow his passions or inward feelings, and would it not tend to lead different ways, according to the prevalence of this or that appetite or passion?" Let it be remembered that the bishop wrote more than a century ago, and that new light has been thrown on the moral constitution of man. It is not to be supposed that our Creator has implanted in the constitution of man any passions, inclinations or desires, but for his own good and the good of the whole human family. We can readily see that many of these passions, or desires, tend to our own happiness and the happiness of those around us, benevolence, attachment to friends and offspring, conscientiousness, or a sense of justice. The beneficial application of some we cannot so readily perceive; but to suppose our Creator has given us passions to lead us to our own destruction or the injury of others, would be inconsistent with all our ideas of divine wisdom and goodness. It should be remembered that man is created a responsible, and, consequently a free agent; and that if his Creator has given him passion which may be abused, he has also given him reason to guide and direct him. Like fire in the material world, given as a most important blessing, but by neglect, or carelessness, or abuse, becomes a most destructive agent.

Sidney Smith, in his valuable work on Moral Philosophy, says: "The passions are in the moral, what motion is in the physical, they create, preserve and animate us. Without them all would be silence and death. Avarice guides man across the ocean. Pride covers the earth with trophies, mausoleums and pyramids. Love turns man from savage rudeness. Ambition shakes the very foundation of kingdoms. By the love of glory weak nations swell into magnitude and strength. Whatever there is of beautiful in human events, all that strikes the soul to and fro and is remembered while soul and flesh cling together; all these have their origin from the passions. It is only that which gives man that high enthusiasm for his country, and makes him regard it as the only object worthy of attention, an enthusiasm which to common eyes appears madness and extravagance, but which always excites fresh powers of mind, and commonly insures their success. In fact, it is only the great passions

which, tearing us away from the seductions of indolence, endows us with that continuity of attention to which alone superiority of mind is attached. It is to the passions alone, under the providence of God, that nations must trust when perils gather about them and their last moments seem at hand. The history of the world shows us that men are not to be counted by their numbers, but by the fire and vigor of their passions, by their deep sense of injury, by their memory of past glory, by their eagerness for fresh fame, by their clear and steady resolution of ceasing to live or of achieving a particular object, which when it is once formed shakes off a load of manacles and chains and gives free scope to all heavenly and heroic feelings. There are seasons in human affairs where qualities fit enough to conduct the common business of life are feeble and useless, when men must trust to emotions for that safety which reason at such times can never give. God calls all the passions in their keenness, and gives vigor for the present safety of mankind, anger and revenge and the heroic mind, and a readiness to suffer all the secret strength, all the invisible array of the feelings, all that has been reserved for the great scenes of the world. For the usual hopes and the common acts of man are gone, kings have perished, armies are subdued, nations mouldered away. Nothing remains under God but those passions which have often proved the best ministers of His vengeance and the surest protection of the world."

Mr. George Comb, in his work on Moral Philosophy, says: "There are two questions very similar in terms, but widely different in substance, which we must carefully distinguish. The one is, what actions are virtuous, and what constitutes them virtuous? The answer to the first question fortunately is not difficult. Most individuals agree that it is virtuous to love our neighbors, to reward our benefactors, and to discharge our proper obligations to God, etc., and that the opposite are vicious; but when the second question is put, why is an action virtuous, the most contradictory answers are given by philosophers. It appears to me that man has received a definite body and mental constitution, which clearly points to certain objects as excellent, to others as proper, and to others as beneficial to him, and to endeavor to obtain those objects are duties prescribed to him as laws of his constitution, whilst whatever tends to defeat these attainments is forbidden. The web foot of the duck, for instance, clearly bespeaks the Creator's intention that this creature should swim, and he has given it an internal impulse to act accordingly. The human constitution has various courses of action to be designed for man as clearly as the

web foot indicates the water to be the sphere of the duck's activity; but man has not received, like the duck, instincts calculated to prompt him unerringly to act in accordance with the adaptation of his constitution. He is, however, endowed with reason qualifying him to discover both the adaptations themselves and the consequence of acting in conformity with or in opposition to them." Mr. Comb divides the faculties into three great classes, viz.: 1st. Animal propensities. 2d. Moral sentiment. 3d. Intellectual faculties, and says all these organs are the gift of the Creator. And in speaking of them as such, says: "I am bound to treat them with the same reverence that should be paid to any other of his works." As to the precise number of independent faculties, or by what name they are called, is a matter of indifference. Whether the faculties are innate or only the power of development, is immaterial. What is required to know is that these several faculties exist in all well organized minds; that they are manifested through the agency of material organs; that they differ in different individuals and in the same individuals at different times as there is any particular excitement to a particular faculty, and that the power of manifestation will depend upon the perfection of the instrument or organs; that these several faculties are governed by the same laws which govern the general economy, viz.: that they are strengthened by regular exercise, injured by over-exertion, and weakened by want of use; that all the faculties may be exercised and improved in harmony, or that each separate faculty may be improved to the neglect of others. But no cultivation can create or give power to a faculty that does not exist or is wanting.*

Bishop Butler, author of Butler's Analogy, in the preface to one of his sermons, says: "It is from considering the relation which the several appetites and passions of the inward frame have to each other, and, above all, to the supremacy of reflection, that we get the idea of the system of human nature; and, from the idea itself, it will as fully appear, that this our nature, *i. e.*, constitution, is adapted to virtue, as from the idea of a watch, it appears that its nature, *i. e.*, constitution or system, is adapted to measure time. Mankind have various instincts and principles of action, as beasts have; some leading most directly to the good of the community, and some most directly to private good. Man has several which brutes have not, particularly reflection or conscience; an approbation of some principles of action and disapprobation of others. Brutes obey their instinct

* It is said the late Dr. Nott remarked, give him the training of a class of boys and he could make them all brave.

or principle according to certain rules, suppose the constitution of their body and objects around them. The generality of mankind also obey their instincts or principles, one and all of them; those principles we call good, as well as bad, according to the same rule, namely, the constitution of their bodies and the circumstances they are in."

"Brutes, in acting according to the rules before mentioned, their bodily constitution and circumstances, act suitable to their whole nature. If no more was to be said of man's nature than what has now been said, if that as it is, is true, was also a complete and adequate account of our nature. But this is not a complete account of man's nature; something more must be brought in to give an adequate notion of it, namely, that one of the principles of action, conscience or reflection, plainly bears upon it marks of authority over all the rest, and claims the absolute direction of them all, to allow or forbid their gratification; neither can any human creature be said to act conformably to their constitution or nature, unless we allow the absolute supremacy and authority which belongs to it."

The passions, so beautifully described by Dr. Smith, when restrained, directed and controlled by this higher sentiment, leads to the highest and most worthy achievements of which man is capable, but in the absence of such control, only urges him on to infamy and ruin.

If, as Bishop Butler asserts, the Creator has given to animals an instinct to direct them for their good, and has given to man the same passions and instincts, but in addition has given to man something higher and more noble, to govern, guide and direct these instinctive passions and feelings, namely, reason; this, then, constitutes the distinction between man and the brute, a gulf which no theory of development can ever bridge over.

In brutes, as in man, those faculties common to both may be improved and strengthened by cultivation; but no cultivation can create a new faculty. Man, however, in addition to reason, has other faculties, unknown to animals, for the proper use of which he is responsible, viz., the feeling of veneration, which looks to his Creator in awe and thankfulness, a feeling of benevolence or kindness to his fellow-beings, a feeling of conscientiousness which enables him to judge between right and wrong, a feeling of self-esteem and a love of approbation, which as clearly indicates that man was designed a social being, as the web foot of the duck indicates that the duck was intended for swimming in the water.

If we look around us, we find that the outer world is admirably adapted to minister to the gratification of these several faculties. Look

at the verdant fields, the music of the birds, the brilliancy of the heavens, with its sun, moon and stars, all contributing by their warmth and influence, not only to the comforts but to the joys and pleasures of life. If it is true that the duck is fitted for the particular sphere it was intended to fill, can it be doubted that man, too, was by his constitution fitted to fill the particular sphere designed by the Creator's wisdom? Is it not, then, not only a duty to our Creator, but the part of wisdom to ourselves, above all things, to examine, and, as far as possible, understand the relation pointed out by our organization?

Dr. Layrock says: We put this question one day to a profound and lucid thinker of this class, *i. e.* metaphysician. "Has metaphysics or mental philosophy contributed anything to the elucidation of the nature and cure of insanity, or of any aberrant forms of mental action now prevalent? His answer necessarily was, that neither had contributed anything."*

It is asked, what has been accomplished by the doctrine now promulgated? I answer, that it has been demonstrated that insanity, or deranged mental manifestation, is an evidence of disease of the brain, to be treated as other diseases. It has banished, it is hoped forever, that disgrace of civilization, the ancient *mad-house*, and erected in its stead splendid asylums, where many of the victims of insanity are restored to health and usefulness, and the incurable receive all the care and attention their condition will admit. It has erected asylums where the poor idiot is rescued from the degradation to which he was subjected, where his wants are cared for and the few faculties which he may possess are cultivated, instructed and strengthened, and his physical wants supplied.

It is said we have a written revelation, pointing out our duties to our Creator, our neighbors and ourselves, and fears have been sometimes expressed, and infidelity has sometimes boasted, that the revelations of science were in contradiction to the scriptures. No such fears need be apprehended. The constitution of man and the other works of creation are as much a revelation from our Creator as his written word, and the one cannot be in contradiction with the other; both are liable to misinterpretation, but there can be no contradiction. "The Creator does not work after one law in the natural, and another and diverse and contradictory in the supernatural order; and hence we discover the reason of all the Creator's works, the perfect harmony of revelation and real science, and the aid which real science gives to the interpretation and clear understanding of revelation. God is

* Medico-Chirurgical Review for January, 1855, p. 21.

one, and works always after one and the same law and order, and is never in contradiction with himself."

Bishop Temple, at a recent exhibition of the Polyglot school of science, England, says: "I have a very real conviction that all this study of science and art comes from the providence of God, and that it is in accordance with His will that we should study His works; that as He has given us a spiritual in His word, so also has He given us a natural revelation in His creation. I am convinced that God's word has nothing to lose, but everything to gain by a true and careful study of God's works. The more light we get, the more true discipline of our intellect by the study of all these things that God has scattered in such profusion around us—all their wonderful order and wonderful beauty—so much the better shall we be able to serve Him in our affection, but also to understand the meaning of his spiritual revelations. I am convinced that all light, of whatever kind, is good and comes from God; that all knowledge comes from Him and can be used in his service; that nothing that really adds to our knowledge of the world is for one moment to be despised, but, on the contrary, it should be the effort of myself and all who undertake to instruct our brethren in religious truth, to show that we feel that religious truth and secular truth are not only capable of being reconciled, but really come from the same God, who is the God of all truth."

It is asked how it is that while man is endowed with reason, and surrounded by so many blessings, we see so much misery and suffering around us. I will let Dr. Johnson answer this question. Speaking of the beggars in Rome, he says: "While surveying, with aching and humiliated heart, these swarms of loathsome and horrible objects, the impious question has sometimes flashed across my mind, can these crawling wretches be destined for a bright immortality in the skies denied to the noble and instinctive animals who never deviate from the laws and forms impressed on them by the hand of their Creator? Such *impious thoughts*, however, are soon quelled by the reflection that whether raised above or sunk below the level of the brute creation around him, man has still that *awful gift of responsibility—reason*. Whether it be dormant or developed, clothed in rags or crowned with diadems. He alone of all created beings has the power and the permission to sink beneath his rank in the great scale of animated nature, and he alone ought to suffer the penalty. Those, too, who, as rulers, contribute to the degradation of their fellow-creatures, will have to answer for their conduct. Those who trample over are still more guilty than those who are trampled down."*

* Change of Air, etc., by James Johnson, M. D., p. 203.

ARTICLE IX.

On the Cause, Prevention and Cure of Tuberculous Phthisis: Being an Essay for the HIRAM CORLISS Prize. By GHISLANI DURANT, M. D., of New York.

"Ut potero explicabo, non tamen quasi Pythius Apollo, certa ut sint et fixa quoe dixero."—CICERO.

"Phthisis means a wasting away, a consuming; but of late years the term has been restricted to that species of wasting disease which consists in the occupation of the lungs by tubercular matter, and the changes which that matter suffers and works."—*Watson's Practice.*

It seemed to me that in calling the attention of the competitors to the *Cause, Prevention and Cure of Pulmonary Phthisis*, the intention was that all discussion should bear mainly upon the most practical points. Besides it will be granted that it would have been difficult if not impossible, to give within the limits of an essay, a complete treatise upon an affection that from the begining of medical science has exercised the minds of the most prominent men of the profession.

Therefore, neglecting all theories, however satisfactory or unsatisfactory they may be, all anatomical details and mere description of textures, I will endeavor to constantly apply myself to the practical side of the question, and, profiting by the new views, of which clinical observation, supported by history, have shown us the truth, to point out what is the primary cause of this pathological state, and the basis of therapeutical indications. When we know under what conditions and in what manner a morbid product is developed, we are near the discovery of the means by which that development may be averted or prevented.

Tubercle is not confined to one part of the body, but is found in the lungs, brain, kidneys, spleen, prostate gland, epididymis, testicles, uterus, ovaries, serous membranes, etc., and even in the osseous framework of the body itself. Its seat is very variable, though it is most often met with in the cellular tissue, as in the lungs, where it is either in the subserous, submucous, or parenchymatous. It may be deposited upon the surface of membranes or in the midst of other morbid products. It is generally found in the neighborhood of blood vessels, great vascularity seeming an essential condition for its production; the non-vascular tissues, or those which are but slightly vascular, seldom containing it. An important point to know is the relation which exists between tubercle and the surrounding tissue, since it may, under certain conditions, remain latent for long periods of time. More

often, however, it, immediately upon its formation, gives rise to more or less pain and congestion in the neighboring parts:

1st. By the irritation caused by its presence.

2d. By obstructing, in a greater or less degree, the circulation of the blood in the parts in which it has been deposited. And,

3d. By the change which it impresses upon the blood.

If recent observations have settled the important question that tuberculous matter may be deposited in various portions of the body, such as the brain, the lymphatic glands, etc., without a particle being found in the parenchyma of the lungs, we must not lose sight of the fact that the lungs are above all organs, peculiarly liable to this morbid condition, since in them not only does there seem to be an affinity for such a peculiar cell-formation, but the structure, functions, etc., of the lungs, are such as to favor to a far greater extent than any other portion of the body, the formation of this morbid product. They are, therefore, very often the only portion of the organism, in which this growth is found. This is not the only constitutional trouble which tends to localize itself. Variola, syphilis, typhoid fever, etc., all react with far greater intensity upon certain parts of the organism than upon others. Not only do the lungs display a greater impressionability to this disease, but certain parts of them are peculiarly liable to it. Thus it is known that tuberculuous matter is more often found at the apex than at the base of the lungs, and that in the former situation its development is most rapid. Louis further observes, and with reason, that the largest cavities are more generally found near the posterior than the anterior border.

Still another important fact for us to consider, is that the left lung is far more liable to be affected than the right. Louis records seven cases in which one lung alone was affected, and of these seven in two cases only was the right diseased, while the left was affected in the remaining five. In twenty-eight cases where almost complete disorganization of the upper lobe on one side existed, this took place in twenty-eight on the left, and in ten on the right side. These facts were known for a long time before any explanation of their cause was attempted. It is only recently that the reason of this phenomenon has been discovered.

During the respiratory movements, the entrance of air into the lungs is determined by the enlargement of the chest. This enlargement is owing in a great measure to the movements of the ribs, sternum and other parts which compose the thoracic parieties. The movable pieces or levers are the ribs and sternum. The vertebral

column which acts as a fulcrum to these levers does not take any active part in producing this enlargement. The ribs which are directed from above downwards, and from behind forwards, in order to produce any amplification of the chest, are elevated anteriorly, the center of motion being at the costo-vertebral articulation. The amount of movements therefore increases directly as the distance from this articulation. This change in the position of the ribs, and sternum of necessity increases the antero-posterior diameter of the chest, that is, the distance from the sternum to the vertebral column. The lateral diameter of the chest is, at the same time, increased by the motion of each rib, around an imaginary axis connecting its anterior and posterior extremities. The sternum also participates in the anterior motion of the ribs, and the amount of movement which takes place is proportional to the distance of the moving part from its superior border. All the movements of the osseous framework of the chest, then are greater, the further we proceed from its superior extremity. From this it results that at its apex the lung is imprisoned in a bony box where little if any expansion can take place, whereas, at the middle, and especially at the lower portion of the lung free expansion can occur.

The anatomical relation and position of the apices of the lungs, and their diminished expansion are the causes of this peculiar tendency of tuberculous matter to develop at the apices rather than at the bases or middle portions of the lungs. The vertebral column is almost immovable, and, as a result, the superior portion of the lung, and especially that part which is posterior, and therefore in the neighborhood of this column, is more often the seat of passive hyperæmia than elswhere. The presence of the heart upon the left side and its less complete physical development, would in the same way explain the more frequent appearance of tubercle upon that, than upon the right side.

If from the works upon tubercle we attempt to gain any knowledge of its nature, we find only the most conflicting statements. The hundreds of theories concerning its origin are all very ingenious, but all are easily refuted. Fourcroy and Baumes for example, state that the cause of tubercle is too great a supply of oxygen, while others such as Cooper and Richerand, make it depend upon debility and atony of the system. Andral thought he had solved the vexed problem, when he announced that tubercle was formed from pus, which being deposited at some point of the organism, acquired a greater degree of hardness, and finally presented the aspect of

tubercle. Cruveilhier and Lallemand's experiments, to show that tubercle is only concrete pus, are not more conclusive than the theory of Andral, since the microscope shows radical difference between the appearance of concrete pus globules and tubercular matter. Broussais was of the opinion that tubercle had its origin in a diseased condition of the white circulatory vessels. This view however must be abandoned since, as Papavoine has shown, the lymphatic vessels of a tuberculous ganglion may be injected just as readily as if they were in a perfectly healthy condition.

Dalmazzone is of the opinion that the milliary tubercle described by Laennec is only a development, or the second stage of tubercle; the first being a small round cellular body, of a red or yellowish tint, and about the size of a millet seed, which is attached by more or less vascular filaments to the surrounding tissue. Barron believed that the small red points which first appear in the tissue, and later on become studded with gelatiniform granulations, are only blood cells which have escaped through the walls of the extreme capillaries, and which become transformed into tuberculous matter. Bouchat also regards them as originating in the blood. He concludes that they are the result of hyperæmia, and, following that, the obliteration of some of the capillary vessels; that they are not bodies which depend upon a special circulation for their development and growth, but like certain parenchymatous vegetable products, they have their periods of development, maturity and softening, the latter being their death. Finally, Boyer, after vainly endeavoring, from an examination of all these theories concerning the cause and nature of tubercle, to obtain some information concerning the nature of the affection itself, tells us that tubercle is an accidental product, resulting from the exudation from the capillaries of a plasma, very rich in gelatiniform molecules, which are found to absorb salt, especially calcium phosphates. This exudation grows by epigenesis, and it rather pushes out of the way than destroys the tissue in the midst of which it is developed.

Bayle, Laennec and Vogel consider tubercle as well as cancer to be new elements in the organism. Lebert looks upon it as specific in its origin, and possessing perfectly definite and fixed characteristics.

As we see, the opinions concerning the nature of tubercle are manifold, and the question we are called upon to decide seems to be, whether tubercle is a product secreted in the body just as certain foreign substances are, or whether it is an accidental organized body, possessing a life peculiar to itself.

We believe that in the present state of medical science it is no.

longer possible to admit that in either health or disease, any new element of another kind or nature, parasite alone excepted, other than those which are normal in character, can be produced. The knowledge of the different phases through which all normal elements of the body pass, from their germination to their final destruction, which has been gained by means of the microscope, has overthrown the doctrine of epigenesis, as well as that of the specific nature of morbid products. All pathological products are homologous, not heterogeneous, and whatever characteristic appearances an abnormal product may have, which point it out as differing from the physiological or normal tissues, are only the result of a dystropic state more or less advanced. Tubercle is neither a parasite nor a heterogeneous product, it is *an altered homologous element.* Virchow truly described it when he called it a poor product, a miserable neoplasm from the start, for in truth, there exists neither life, organization nor trace of circulation in it. From the beginning tubercle *is the result of a weakened and vitiated nutrition.*

It remains now for us to consider what elements of the body are capable of undergoing transformation into tubercle. According to Perroud these elements are the white globules or leucocytes, epithelial cells, fibro-plastic elements, medullary cells and blastema. The same author, in studying the process of tuberculization, how it is that certain elements are transformed into tubercle, taking into consideration the most recent developments, both microscopical and chemical, has arrived at the conclusion that the first step toward this change is the death of the normal tissue, and following this, decomposition of the effete material. Nature now attempts the removal of these products; the fatty portions are in a measure separated from the protein elements; alkaline fluids are poured out to form a soap with the fatty materials, in the same manner as the dead fœtus *in utero* is removed, and as fat is formed in the cadaver. Certain portions are thus rendered capable of absorption, and there remain dessicated mummy-like elements, to which are added, later on, pigment granules and calcareous salts.

Unfortunately, however, this reparative process but seldom occurs. The neighboring tissues, irritated by the presence of tuberculous masses, pour out their secretions abundantly, and the tubercles instead of drying, swell up, and increasing greatly in size, assume the appearance of pyöid globules. This is what is called the softening of tubercle. When the disorganization has reached a more advanced stage only granulations, the remains of the tuberculous histological element, are seen.

From the anatomical conditions which tend to the production of tubercle, and from the considerations which we have added as to its mode of formation and evolution, there results:

1st. That tubercle is not a new or specific element.

2d. That many of the normal tissues are capable of being transformed into tubercle. And,

3d. That in order for this change to take place, it is necessary that death of the tissue, followed by decomposition, partial dessication, mummification, and finally softening due to the absorption of these pathological products, should take place.

The conditions, then, which give rise to the production of tubercle, are manifold, and the result of the development of the morbid product is dependant entirely upon the condition upon which it was founded; the gravity and intensity resulting entirely from causes extrinsic to tubercle itself.

Since tubercle, in the same manner as gangrene, results from the disorganization and decay of normal tissues, it may be dependant upon a local or a general cause. In order to determine to which of these two causes it owes its origin, since the effect produced upon the organism will not vary in the slightest degree, clinical observation must be resorted to, as it alone will enable us to recognize the characteristic differences by means of which these varieties of tuberculosis may be distinguished.

Of the conditions favoring a development of local tuberculosis, the only species with which we are at present concerned, there are two which often co-exist:

1st. The retention of histological elements, which, having performed their function in the economy, have become effete, and therefore should have been eliminated from the system.

2d. Perversity, or diminution of formative power of the neighboring tissues.

The aggregation of an infinite number of anatomical elements constitute the organism. Though each in itself is perfectly distinct and separate from all others, and though each is developed according to, and is governed by its own laws, yet all organic elements are subject to the general physical laws which control all bodies.

The different modifications which the anatomical elements are susceptible of undergoing, will not differ in the least if these changes be, on the one hand, produced by natural physiological causes, or, on the other, by some morbid agent. The difference is in degree only, not

in kind, for both owe their existence to one and the same cause, viz.: the properties themselves of the living matter.

The presence of some external cause is a necessary requisite for the induction of changes in organic elements. In the complex living organism, however, one cell may react upon another as a foreign element, and thus the cause may reside within the body itself. This influence is the more worthy of notice on account of the affinity which seems to exist between different substances and organs, thus localizing certain physiological and morbid actions. Since substances which are carried through every portion of an organism by its circulating fluid must exert a greater or less influence upon every part of it, are we not justified in ascribing their limited action, their natural selection for certain tissues, to the influence exerted by peculiar conditions of the cells of which the body is composed? In the one case the cell is enabled by its inherent power to resist all action which can be perceived by the senses, while in the other, where the external influence is greater than the resisting power of the cell, changes take place; these modifications, in every case, being dependent, not only on the character of the external force, but also upon the character of the cell itself.

As there exists no effect without a cause, so there is no reaction which is not dependent upon an action having its cause external to the molecule undergoing change. If, then, there be no physiological spontaneous disturbance in the living organism, still less can there be any pathological one. If a nerve cell generate excito-motor force, and thus give rise to convulsive muscular twitchings, or if pus or tuberculous matter be developed from a plasmatic cell, it is because some external influence has operated upon the nervous or plasmatic cell and thus produced the effect observed. (*Villemin.*)

We may here anticipate and say that the granulations which are seen so thickly sown throughout the lungs, the pleura, the peritoneum, etc., are due to the direct influence of an external agent, which must have been present wherever these granulations are found.

Broussais and his school mistook the effect for its cause, when they described pathology as an "irritation and inflammation." With Liebig, we would define pathological changes as "an intimate abnormal molecular modification, anterior to all symptoms, producing those which are manifested, and among which stand foremost, irritation and inflammation."

If this molecular modification, morbid in character, the result of conditions or relations which previously did not exist in the body,

determined by one or more modifying agents, whatever they may be, permits the circulating fluid to pass as freely as in health then, although, in passing through tissues which are the seat of, and modified by morbid influences, it must leave these tissues in a form more or less altered, "irritation" only exists. This "irritation" then, may be defined as a change in the conditions or relations existing between the component elements of an organism in its normal state, and an alteration in the physiological actions and re-actions, peculiar to the component molecules. If, however, the cause is intense enough to interfere with the circulation of the fluids, or to destroy any portion of the living aggregate, then there results a stasis of the fluids and congestion of the parts, followed by tumefaction. By this alteration new affinities are created, actions and re-actions, generally abnormal in character, result, and heat is developed. The molecules of the organism subjected to conditions unsuited to their existence die, and in their metamorphosis give rise to new molecular combinations, exudations and the formation of pus resulting, the change being accompanied by more or less pain, constituting suppuration. Thus we have seen how the general characteristics of inflammation, congestion, swelling, heat, pain and suppuration, are produced.

When science attempted the investigation of the phenomena of inflammation, the constant presence of an increased vascularity seemed to demonstrate to pathological anatomists that hyperæmia was the *sine qua non* of inflammation. It was also noticed that effusions of purulent or organizable material into cavities followed closely this hyperæmia. This led to the discovery that from the dilated vessels fluids transuded, which were either developed into tissue or underwent a retrograde metamorphosis, and that the presence of these products of abnormal cell action was the evidence of inflammation. Now, as a difference had to be made between phlegmasic exudation and physiological congestion, the former was made dependent upon the latter; exudation became, therefore, a mere passive act, and its character could depend only upon the fluid furnishing the exudation matter. This view supposed, then, the presence of cancer, tubercle, pus, etc., together with plastic material and the constituents of normal tissue, are already formed in the blood, and ready at any moment to be filtered out from the circulating fluid, to become fixed in the organic tissues, or spread out on its membranes.

Viewed, however, in the light of modern science, the blood has lost almost entirely the pre-eminence which it before held in a pathological point of view. We can no longer look upon it as a fluid

possessing that independent existence which, even to-day, some physiologists are disposed to grant it. We must regard it as a product composed of parts of intrinsic and extrinsic origin, certain morphological elements of which are furnished by the various organs of the body. None of its elements are capable of perpetuating themselves. All require renewal, and renewal generally by means of the digestive apparatus. Thus, water, sugar, albumen, fat, salt, etc., are furnished directly; fibrin is but a modified albumen, and urea, creatine and creatinine are products of disassimilation. The blood cells have their origin in the glandular apparatus. We look, then, upon the blood as being dependent to the same extent upon the tissues that they are upon that fluid; and we must seek the cause of any alteration in the character of the blood, in the tissues through which it flows, and the changes undergone by the organs whose duty it is to furnish the necessary elements of which it is composed. For, not only does the blood carry to all the organs the elements necessary for their nutrition, but it also bears away all those products which have become worn out and therefore foreign material.

The dilatation of the blood vessels, the hyperæmia, the sanguineous stasis, the exudation, all remain as present and incontestable phenomena in the course of an inflammatory process; but they are no longer regarded as causes; they are merely the effect of changes in the force, constancy, activity, and number of the organic elements. The increased activity of these elements is at first manifested by an augmented volume, diminished transparency, and changed aspect. It may stop at this point, and the elements return to their normal shape and size, thus constituting retrocession; or, secondly, this increased activity may be followed by a more or less complete destruction of their organic properties. The change impressed upon the elements, from whatever morbid cause resulting, seems only to end with their death. There is a physiological loss, not only in the amount, but in the kind of material, since many of the cells, though not entirely destroyed, undergo a retrograde metamorphosis, a fatty degeneration. Lastly, we may have after the tumefaction, and opacity of the cells, an increase in their number. Hyperplasy, or hypertrophy of cells, in regard to number, must not be regarded as confined to inflammations; it is common to all neoplasis. At the beginning of hyperplasy, no difference is perceptible to our senses in the manner of development of the cells of cancer, tubercle, or those which are to become normal tissue.

In all formative processes two things must be considered, the cells and the connective tissue. The latter is determined by and under the

control of the former. If the newly formed cells have developed around them connective tissue, so as to fix them in place, new tissue, more or less durable in character, results; but if this retaining element be not developed, then the cells become morbid products, and are bathed by a more or less sero-albuminous fluid. If this new formation takes place upon the surface of a membrane, then the determination tends to the surface; but if in an organ, then the morbid products tends to a *fomes morbi*. This is what is known as suppurative inflammation. When this morbid condition is reached, the cells multiply very rapidly, and with a certain degree of uniformity throughout the part attacked, so that in a very short time the entire portion degenerates into a mass of pus globules, which is almost entirely separated from the surrounding parts. (*Villemin.*)

We may go still further, and say that the amount of pus formed, or, in the morbid condition to which we intend more particularly to devote our attention, the amount of tubercular matter depends upon the quantity of blastema which has been changed in regard to its normal composition or determined from its proper place. If, by any means this material, now morbid, can be evacuated, and the condition of the proliferating cells so changed that they shall no longer produce this diseased element, then we can arrest the progress of this disease, and, provided the cause which produced this morbid condition no longer exists, hope for a restoration of the parts to their normal condition. If, on the other hand, this morbid product be not eliminated, then by catalytic influence it determines a still further production of tuberculous matter, and this alteration of normal tissue continues and increases locally, until, finally, the cells of the blood becoming influenced by the ferment, are themselves, when a suitable nidus is found, capable of inducing the tubercular change. The same result will also follow if the matter be eliminated, but the cells already formed be allowed to continue in full vigor.

In all morbid states of the system, there is always a greater or less degree of inflammation present, though very often it is of so slight or transient a character that it is not perceptible to our senses. It may be entirely local, or may pervade the entire organism. In all diseases, in pulmonary phthisis, consequently, we will find, in certain parts of the organism where the morbid modification is carried too far, a material lesion sufficient to disturb or even to arrest the normal functions of these parts, and, owing to this interference, the fluids of these portions of the body accumulate. This is congestion, the first phase of inflammation. The above may be readily demonstrated by placing

under the microscope a portion of the mesentery or of the foot of a living frog, and then applying some strongly irritating substance to it. Immediate change in the state of the circulation, followed by an accumulation of blood about the point which has been irritated, shows that the normal conditions of existence have been changed. This point is said to be irritated, or, according to our view, modified with respect to its intimate conditions of organization and function, by the body which we have employed. We must not, however, think that the sanguineous molecules which accumulate are always drawn to that part. A few modifying agents may, it is true, act by attraction or affinity upon the sanguineous molecules, or the others which may be there. They may perhaps fix them there, and thus create a local impediment, and become a cause of the accumulation of the fluid and congestion of the part; other agents, however, may act in an entirely different manner, and far more intensely. A contondant body, for example, may change, or even destroy the organic aggregate without attraction, create thus an obstacle to the capilliary or endosmotic circulation of the liquids, and necessitate thus, their accumulation, congestion, and following this, all the other symptoms of inflammation. Once accumulated, the sanguineous, or other globules may attract or repulse one another mutually, and offer to the eye a repetition of what takes place in the solution of a substance, which may or may not crystallize. Sometimes there is attraction, sometimes repulsion, but always modification.

Inflammation then may be understood to be an intensified physiological action of the fundamental tissues. Although in many morbid conditions, tubercle and cancer for example, it is said to be absent; yet the ultimate phenomena differ so very slightly, if they differ at all, that we must regard it as being common to these, as well *as to other* diseases.

As regards the action upon which the deposit of tubercle depends, a moment's consideration, will show us that the whole discussion turns upon the word inflammation. "If by that term," says Bennett, "be understood pain, heat, redness, etc., then tubercle is not inflammatory. If, on the other hand, we consider that the essential phenomenon of inflammation is an excreased exudation of blood-plasma, then tubercle must be regarded as an inflammatory product. What then constitutes the difference between the products of ordinary inflammation and tubercle? It is the comparatively unorganizable power of the latter. In tubercle we have granules and imperfect cells; in the product of healthy inflammation, we have granules and perfect cells. Both these

morbid products are formed by the exudation of the blood-plasma If it undergoes transformation into perfect organisms, it constitutes what pathologists, have, in some cases, called the result of inflammation, in others different kinds of tumors. If the transformation be arrested or rendered imperfect, it forms what has been called tuberculous or scrofulous deposits."

Whatever tubercle may be, it does not differ in the least as regards its formation from pus. Both originate in an increased proliferation of cells; but while the cells of the former are held closely, bound down by the connective tissue surrounding them, the later are free and float in an albuminous fluid.

Whatever formative processes take place in the organism, whether they are physiological or pathological, necessarily give rise to an increased nutrition, in order to supply material, out of which the new growths are to be found. Thus all inflammatory processes are accompanied by a greater or less afflux of blood to the part involved. This is but a phenomenon consecutive upon, and subordinate to the activity of the cellular elements. It is true that a congested condition of any part of the system may develop a similar reaction throughout the economy, since many irritants produce this result. As the supply of blood is regulated by the innervation of the part, the prolonged stimulus of an over supply, may give rise to the same result namely, the formation of new tissue. This, however, does not in the least invalidate, in fact it confirms the proposition, we may say the truth, that all the phenomena of inflammation and neoplasy have their origin in cell action, and that this alone, the original cause which impressed the change upon the cells being removed, has the power of originating and carrying on these changes.

On account of this congested state of the elements of the organism, alimentation takes place far more readily and to a much greater extent than in the normal condition; and, sooner or later, certain principles of the blood are absorbed or modified, thus changing the condition of that fluid. It was formerly considered, that all products physiological as well as pathological, had their origin in a fibrinous exudation, which suffered spontaneous organization in various ways, according to the conditions under which the exudation took place, and the character of the organ or tissue in which it took place. Thus, bone being formed in one locality, pus in a second, cancer, tubercle, etc., in a third, etc. To-day, however, we regard this augmentation of fibrine as an effect not as a cause of phlegmasia; for we find that at the outset of all inflammatory processes, the amount of fibrine is but

slightly increased, while it reaches its maximum at the stage of suppuration. The presence of fibrine outside of the circulatory system, is due to one of these causes:

1st. Rupture of the vascular system.

2d. It is a product of cell action, being formed from the albumen of the blood in the place where it is found.

3d. Fibrine is not the plastic blastema it was formerly supposed to be; it is rather a product of disassimilation, since in all probability it results from the oxydation of protein compounds.

This view of the case is rendered still more probable by the fact that the lymphatic fluid, which is a residue of nutrition, contains fibrine in almost exactly the same proportion as the circulatory fluid; while the amount of albumen in the latter, is far less than in the former; thus showing that the fibrine is a secondary product, and developed at the expense of the albumen, contained in the nutritive liquid. Add albumen to lymph and we have plasma.

According to Milne Edwards, the fibrine of the lymphatic plasma, seems to have its birth in the connective tissue. In fact when at any point whatever of the organism, the state called inflammatory is manifested, we very soon see the intermediate tissue, and the cavities enclosed by it gorged with a coagulable liquid rich in fibrine. Did this fibrine arise from the blood by exudation, the amount so lost should diminish the quantity contained in the circulatory fluids; but the contrary of this proposition is found to be the case; the amount of fibrine in the blood increases, instead of diminishing and, therefore, cannot be obtained by direct exudation. Fibrine seems to be constituted, in situ, in the diseased tissue, and what takes place in that pathological state, seems to be only the exaggeration of one of the effects which the nutritive work—which is the normal condition—produces in the same parts. A portion of fibrine originating in the immediate neighborhood of the sanguineous capillaries, or even at the external surface of these vessels, the walls of which are devoid of epithelium, must necessarily be conducted away by the venous blood, but the greater portion is likely to mingle with the lymph, and aid in the formation of the plastic part of that fluid, which replaces the fibrine destroyed in the blood.

If in the animal world we find the various elements of which an organism is composed, the osseous, the cartilaginous, the nervous, the muscular, etc., to which must be added morbid admixtures, such as the syphilitic, the tuberculous, the cancerous, etc., circulating in a confused mass through the nutritive fluid, would we not in the vege-

table world expect to find the same rule hold good, and in the juices of the plant find a blastema, taken already formed from the soil suited to the formation of each part, leaf, flower, fruit, bark, etc? In the soil no blastema whatever is found, only the ultimate elements of which the parts are to be built up. These are absorbed and transformed by the plant. The same thing is true in regard to the animal organism, the ultimate constituents being furnished it in the ingesta, and these by cell actions are combined so as to form the necessary tissues. (*Villemin.*)

Tissues are formed or repaired from a living fluid capable of furnishing elements which, in their turn, may be transformed into the parts required. This fluid is the organizable lymph of the classic writers, and the blastema of micrographers. In order that blastema may be developed into tissue, it must possess a greater or less degree of vitality, or power of organizing. This it may obtain from two sources: 1st, from the general constitution of the individual, any vitiation of which will develop pathological lesions; and, 2d, the blastema is also developed at the expense of the surrounding tissues, and any morbid state in them is reproduced in the newly-formed tissue. They impress upon the cell its characteristic properties, thus giving rise to muscular, nervous, osseous, etc., etc., tissue. This power has been called, by the Germans, the law of analogy of formation. Chemists call it catalysis; some modern physiologists have given it the name *catabiosis.* It is what Geoffroy St. Hilaire denominates *la loi d'affinité de soi pour soi.*

If the preceding observations be correct, is it not evident that, in any tissue the vitality of which is impaired, histological elements can only develop partially, or if, by chance, they do develop, have impressed upon them the same changed or morbid condition which is affecting the tissue itself. This is what takes place in inflammatory states. The histological elements of which the tissues are to be formed die almost in an embryonic state, and are unable to fix themselves in place with cellular substance; they swim in a sero-albuminous fluid, constituting pus, or, the fluid being absorbed, develop into tubercle, cancer, or some other abnormal cell formation.

Phthisis, then, is an inflammatory condition of low intensity and chronic character, with pathological formation. The retention of this secretion is indispensable to the formation of tubercle.

Until quite recently, the doctrine of the hereditary nature of tubercle was almost universally believed. However, when we study the complex phenomena, and examine carefully the contradictory opinions which have been expressed concerning this influence, we gradually lose faith

in its correctness, and finally doubt its influence altogether. Even if we were to admit the truth of the dogma of hereditary transmission, statistics would contradict us; for, of 374 cases occurring in old women at the Saltpètriére hospital, reported by Piorry, 78 died without presenting any trace of tubercle, although their parents died from that disease. So Mr. Scott Allison, physician to the Brompton hospital, an establishment entirely devoted to the treatment of pulmonary phthisis, states that, out of 603 cases, he has only seen the influence manifested in nineteen cases. We cannot look upon pulmonary phthisis as hereditary; and we are supported in this view by the observation of M. Pidoux, that "there is not more than twenty-five per cent of those born of phthisical parents who themselves become phthisical;" and further observation only leads us to doubt, and even to deny, any hereditary nature in that disease. It is rather an individual circumstance, indicating that the blood and organic disposition of the individual are such that, at a certain time, and under the influence of certain causes, this disease may develop in him more readily than in another person. It is rather a diathesis, an idiosyncrasy, than a cause. Broca tells us that "diathesis is not a disease; it is only a cause of disease; it is even only a presumed cause; for it does not come under the cognizance of the senses; it is a theory of the mind, and not a thing observed or observable; it is deduced from reasoning."

The tuberculous diathesis has often been compared with the syphilitic, and is now considered by many authorities to be its grandchild; but the two are entirely different, not only in the manner in which they manifest themselves, but also in their origin. The syphilitic diathesis, up to a certain point, is entirely foreign to the organism. It has its origin in a specific principle exterior to it, which, at a given time, is introduced into the body. The progress from a local to a general affection is due to the general diffusion of the virus throughout the body, and to the reproduction of its peculiar cells; while, in the former, it is merely an aptitude which is ordinarily inherent in the organism, and which, under the influence of the most diverse causes, gives origin to the morbid manifestations. One has a single, special specific cause; the other is the effect or influence of condition. It is not tuberculosis that causes the offspring to inherit pulmonary phthisis. It is the influence which that malady exerts upon the constitution of the parent, to weaken it, and, through the parent, the constitution of the child. It is this weakness, this want of power to resist disease, and not the direct transmission of the tubercle itself, that so often aids in its development in the offspring of tuberculous parents. Very often

this weakness of the offspring is due to other disease; and in these vitiated constitutions, from whatever cause arising, we always find a less power of resisting the encroachment of disease. (*Niemayer.*)

All practitioners have observed the fact that individuals are often found, who, notwithstanding they are the offspring of parents in whom tuberculosis was well marked, throughout a long life never exhibited any symptoms of the disease; and, on the other hand, individual members of a family, without suffering any undue hardship or exposure, and without any appreciable cause, have become the victims of this malady.

In truth, it seems as if each being had his own individuality in regard to health and disease. He may inherit dispositions from one or both parents, or from remote ancestors, or he may be so original as to differ entirely from his parents, and possess an entirely new predisposition; thus he may inherit disease, or he may develop it *de novo.*

"To-day we can affirm, without fear of denial," says Deray, "that it is to hereditary transmission that is due, in a great measure, the fatal propagation of this disease — tuberculosis; but, far from admitting, with certain authors, that parents transmit to their children an organic predisposition, which must, at a certain time of life, necessarily give rise to the development of tubercles, we think that phthisis is hereditary only in so far that the tuberculous parent may transmit to his offspring an organization which is more prone to be influenced by the causes which give rise to tubercle than another." We believe that this view is the only logical one, and that the theory of direct transmission is not only in opposition to reason, but to the results of clinical observation.

What are we to understand by hereditary transmission? Do the offspring of persons suffering from phthisis inherit the disease itself, or do they have impressed upon the organism a predisposition to be influenced by all causes which would produce the disease? If disease can be transmitted directly, it is necessary that the germ of the disease be transmitted at the same time as the germ of life itself. This germ must be the agent producing the disease, if phthisis is transmitted as syphilis is; for the child born of syphilitic parents is impregnated with the virus from the beginning; he is born syphilitic, and does not become so from the action of extraneous causes. He has within himself the cause of the disease. This is not the case in tuberculosis. Very often a man born of phthisical parents enjoys robust health for years, and is then suddenly attacked by tuberculosis. The child of syphilitic parents is syphilitic at his birth; the child of phthisi-

cal parents may develop tuberculosis at five, ten or fifteen years later. And we may well ask, with Villemin, how will the upholders of the theory of hereditary transmission explain why the disease should remain latent so long?

Guizot in 400 post-mortem examinations of the bodies of new born infants, failed to find a single deposit of tubercle. Gluze asserts that there is no born tubercle.

If, then, tuberculosis cannot be directly transmitted, what meaning are we to attach to the term tubercular diathesis? Is it a disposition which certain organisms have to receive tuberculous deposits, and to furnish them with a soil capable of nourishing them, or is it the power of developing tubercle independently of all germs?

We have already seen that the latter view is opposed to both reason and clinical observation. The former theory that by hereditary transmission we are to understand an aptitude or impressive ability to contract it, is the only tenable one. That such susceptibility exists, is proved by the instances in which the children of parents, in whom the disease exists, perish one after another from the disease. Yes, for us, the hereditary transmission of morbid aptitudes, the organic sensibility of Bichat, seems to be a well established fact, a general law governing the organism. Doubtless constitution is transmissible. The child generally inherits from its parents some of their characteristics; strength will engender strength, feebleness generates feebleness. A father whose nervous system is very highly developed, will find the same thing reproduced in his offspring, while another parent whose sanguineous system is strongly marked, bequeaths it to his children. This transmission of individual peculiarities is perhaps more strongly illustrated by the system of vegetative life. This, the basis and foundation of the organism, is generally inherited with all its qualities and defects.

In the same manner, then, as healthy and morbid predispositions of the body vary according to the individual, so does the susceptibility to phthisis. The aptitude for contracting this disease is similar to that for any other. The degree of aptitude for the development of disease, reveals itself in this, as in other morbid states, and nothing more. We see constitutions susceptible to various diseases, pneumonia, variola, etc., and we find the impressionability transmitted to the offspring in a manner just as marked as we do in tuberculosis, and yet who will say that the disease *per se* was inherited?

The arguments given above lead us to conclude, that the syphilitic diathesis is entirely distinct from the tubercular; that while the

former contains the disease in itself, the latter however strong it may be, cannot produce the disease. It requires the intervention of an absolutely essential and indispensable element, a determining agent to produce this disease. Tuberculous diathesis may render the effect more easily attainable, but it *cannot produce tubercle.*

The most competent clinical and histological writers of to-day, agree in seeking the ultimate cause of tubercle in a perverse or imperfect nutrition.

"Daily experience," says Niemayer, "teaches us that a bad state of nutrition is usually accompanied by a feeble endurance of noxious influences. Even without special knowledge of the fact, it is usually assumed *a priori*, that feeble, badly fed persons are sickly; that they are especially prone to disease and do not recover as speedily from its attacks."

Thus while pathological anatomy, strengthened by histological researches, teaches us, on the one hand, that tubercle is but a normal element, altered, decomposed, and mummified, clinical observation points it out as a result of vitiated nutrition.

Some of the later writers upon tubercle, Bennett, Bouchardat, etc., have not only ascribed a defective nutrition as its cause, but have even gone further and attempted to determine the precise change in the digestive functions. Thus Bennett declares, that a want of power to properly digest and assimilate albumenoid substances and fats, is the cause of tuberculous deposit.

Among the other causes assigned for this morbid element, we should mention, as exercising a great influence, cold, dampness, sudden changes of temperature, contrast of season, want of air and light, venereal excess, intemperance, in short anything which tends to decrease the physical strength. In the same manner the lymphatic and scrofulous constitutions, and the hereditary syphilitic diathesis, especially when local inflammations, by becoming chronic, keep up a state of nutrition which is different from that necessary for the production of normal molecular matter, become powerful predisposing agents to the formation of this neoplasm.

All local inflammations or congestions, such as bronchitis, pneumonia, pleurisy, etc., even though they affect the respiratory apparatus but for a very short space of time, are, in persons who are at all predisposed to tubercle, grave affections, which cannot be checked or palliated too soon. The softening of tubercle already deposited, or the deposit of tubercular matter, is very often the consequence of such an inflammation. Indeed, anything which tends to promote congestion

or inflammation of the respiratory organs, such as the sudden cooling of the periphery, especially of the feet, the suppression of the catamenia, the sudden disappearance of hemorrhoids, the cure of any disease which had previously produced a flux from an organ, may prove a cause of tubercle.

Among the causes which have been given as producing phthisis is a too prolonged nursing. According to the observations of Natalis Guillot, each time the child is nursed from eighty to 200 grammes of milk are abstracted, so that in the course of a day from 1,000 to 1,500 grammes are removed. Now, according to the analysis of Regnault, 10,000 parts of milk contain 3,697 parts of mineral salt, of which 2,232, or two-thirds, are phosphates. The infant removes daily from the system of its nurse three and a half grammes of phosphates, or more than a kilogramme in the year.

A too abundant catamenial flow exhausts women, impoverishes their blood, and determines an anæmic condition, with all its evil consequences. The blood is pale, serous, and colors the linen red, with a yellow areola. This species of metrorrhagia is a sign of a weak constitution, and is often followed by tuberculosis. Here we find the primary cause, viz., chlorosis, aggravated at each menstrual period, and daily tending to further impoverish the blood.

Another cause, and, according to MacCormac, the only true cause of tubercle, is prebreathed air; for, sooner or later, the uneliminated, because unoxydized, carbonaceous waste will be deposited as tubercle. Without acknowledging that prebreathed air is the only agent capable of producing tubercle, we fully recognize the application of the aphorism of Ramazzini, "such air, such blood." Those pursuing sedentary occupations are far more liable to phthisis than those whose labor requires them to spend much of their time in the open air.

Coste has demonstrated that phthisis may be produced in dogs and other animals at will, by keeping them in cold, damp places, and carefully excluding the light.

We can readily understand how a chronic enlargement of the tonsils, by interfering with the normal respiration, can lead to consumption. Only a portion of the requisite amount of air can be respired, and the development of the chest is thus interfered with. Indeed, we may even say that the capacity of the chest diminishes as the tonsils enlarge. Dupuytren was the first to notice that children whose tonsils were enlarged ended by having a deformed chest. In them the thorax was rounded behind, retracted in front, and flattened at the sides. Reduction of the tonsils relieves the aerial tract from the bar-

rier, and permits the lung, and consequently the chest, to regain its regular dimensions.

It is an established fact "says Davis, though one not well known, that all things being equal, an animal digests and assimilates food just in proportion to the quantity of air he respires. If this proposition be admitted, it then follows that if we have diminished respiration we must have diminished assimilation, consequently a condition of the vital powers favorable to the development of tubercle. Again, if a depressed state of the powers of life favors the formation of tubercle, it follows that an exalted state of vitality becomes a serious obstacle to this development, and if they are present, it not only prevents their degeneration, but actually necessitates their absorption."

There is another point which has neither received the attention which it deserves, nor been granted the importance due to it. It is the facility and rapidity of absorption of normal or morbid elements, contained in the air, by the pulmonary apparatus. The experiments of Cl. Bernard, upon the rapidity of absorption, and general distribution throughout the circulatory torrent of toxicological and other substances, which are either injected directly into the veins, or absorbed by the respiratory apparatus, demonstrate the truth of this proposition beyond the probability of refutation.

Of the importance of the lungs, as eliminators of noxious substances, we can judge from the fact, that hydrogen sulphide injected into the jugular vein, was found in the expired air in from three to four seconds.

A further proof of the rapidity and completeness of absorption of foreign substances by the lung, was given by Dr. Aupham, in 1861, in a paper read before the academy. He injected potassium iodide, into the respiratory system of two rabbits. One was killed immediately, and the lung substance tested by a solution of starch, for potassium iodide; but a very faint reaction was found, showing that the material was almost entirely absorbed. The second rabbit killed, after a lapse of ten minutes, did not afford the slightest trace of the salt. If bodies like potassium iodide, which are not at all volatile, can be absorbed so quickly, what must be the case with regard to gaseous substances, or with bodies of such tenacity that we are incapable of appreciating them by the senses; bodies such as are commonly classed as miasmata, emanations, etc.

While doubting that tuberculosis is transmissible, from husband to wife, we believe that it may be propagated from the sick one, to those who attend him. Whether or not there be a true miasmatic infection,

as some authors admit, it is certain that the fatigue, the watching, the confinement in the unwholesome air of the sick room, the chillings of the night, and, above all, the sad preoccupation, of which Laennec signaled the power in fostering the inbred tendency to phthisis, and which are unavoidable in similar conditions, are real and powerful causes of a weakening of nutrition.

We have studied the causes: to what conclusion does a consideration of the symptoms lead us? A pale complexion, yellowish, or straw color, discoloration of skin, a diminished embonpoint, and decrease in strength, a more or less rapid sinking, and a gradual alteration of all functions, somnolence, and finally a general collapse of the functions, forces and faculties. Causes and effects then correspond, both diminish the vitality by diminishing the physical powers of the organism.

In a diagnostic point of view nothing gives us a better account of the differences of which tuberculous modifications are susceptible, than the more or less intense and persistent effect, experienced by the nutritive functions. We may even go a step further and state that the alteration of the digestive and assimilative functions is the character proper, of the morbid modifications of the organism, from which depends the development of tubercles.

This is not a new theory, long before our time, physicians and physiologists had recognized the fact that any agent which tended to diminish the physical energies of the system, might become a cause of tubercle. But it is only to-day that these views have received a scientific demonstration.

The physician has but too often the opportunity of observing the insidious march of that terrible failing of the powers of nutrition under which the organism slowly and silently tuberculizes, until the moment when a congestion, or an intercurrent bronchitis, or other accidental cause, locates the trouble in the pulmonary parenchyma.

The weaker one is, the more irritable he becomes; that is to say, the more the organic aggregate is degraded, altered or morbidly modified, the more it is susceptible under the influence of the least modifying cause, of undergoing a more considerable degree of alteration, of lesion, and of manifesting a local or general trouble, more sensible and apparent, and capable of showing the idea of a powerful resistance, whilst it is only the effect of a near cessation of life by the organism. That is, *irritation and inflammation* are only effects common to all diseases, be they due to an excess or a lack of organic or vital conditions, and they indicate only an excitation, an augmenta-

tion, momentary and eventual, relative and local, and not absolute and general, of the organic movement.

What is the basis of the treatment for the prevention and cure of tubercle? In other words, what modification must be impressed, either directly or indirectly, upon the morbid state, in order that the parts involved may be restored to their normal condition?

As long as tubercle was thought to be specific in its origin, it was but natural that all efforts should tend to the discovery of a specific medicine, capable of neutralizing the supposed poison. But, to-day, better informed as regards the nature of the morbid affection, we no longer admit that it is specific in character, or that its evolution, development, and the different phases which it may assume, are anything like as uniform as was formerly supposed. Finally, we are led to believe, that as the influence of the sun and moon produces a rise and fall of the waters, so the modifications of the nutritive function exert an influence upon the manifestations of tubercle. It is from an observance of this very relation (though cause and effect are often confounded), that so much importance is placed upon the preservation of the general health, and the restoration of the appetite in a patient suffering from tuberculosis, and when we see the nutritive functions acting in a satisfactory manner, we have always grounds for hoping, while a failure of the strength and of the appetite, leads us to fear the worst.

Though the local character and site of the trouble should never be lost sight of, it is not from them that we are to derive our therapeutical indications, for it is only by influencing the general life of the sufferer, and by developing his physical powers that we can hope to alleviate if not to cure. In tuberculosis, there are not only similar and even identical indications founded upon the nature of the tuberculous lesions, but there are also indications which are different and even opposite which are dependent upon the cause and progress of the disease, its extent, and the seat of the lesions. H. Bennett has thoroughly established the multiplicity and diversity of the indications, and has shown that the disease is characterized by a diminution of the nutritive functions, and following this loss of strength and the development of an exudation, which in no way either as respects origin or local or general effects, differs from the simple inflammatory exudation. These considerations show us that in order to arrive at any satisfactory results, we have to fulfill at the same time two opposite indications:

1. To recuperate and fortify the general organism by suitable constitutional treatment.

2. To diminish the local, and subdue the general irritation, by an antiphlogistic and weakening treatment.

It is the necessity for the fulfillment of both these opposite conditions that has produced so much confusion in the minds of practitioners regarding the proper treatment, and given rise to almost interminable discussion as to the nature of phthisis, whether it is of inflammatory or non-inflammatory origin, and whether it should be treated by blood-letting, tartarized antimony and other depressing measures, or by tonics and a good stimulating regimen. No treatment of tuberculosis can be conducted upon a rational foundation, unless it combines, as intimately as possible, not only the similar, but also the opposite indications.

Any and all means that are able to arrest not only the inflammatory condition, but the modification which gave rise to it are good. If this modification be owing to an impoverished or vitiated state of the blood, result from what cause it may, and through it to a change impressed upon the organism, give to the blood and the organism the constituent in which it is deficient. If, on the contrary, the inflammatory action is due to an overabundance, or too great richness of that fluid, take such measures as will impoverish it. Thus though the means adopted are as opposed to each other as they can be, yet both tend to produce a single result, the return of the organism to its normal condition, and, as a sequel, the cessation of local trouble.

It is in a reparative and corroborant alimentation, chosen according to the particular state and condition of the subject, that, according to the opinion of all experienced physicians, we are to find the means of preventing and curing phthisical affections. As regards the aliment most suited to this class of patients, the general rules concerning the alimentary hygiene of valetudinarians, must govern us in regard to their selection. The regimen must be based essentially upon the use of analeptics, that is, the food under the smallest possible volume must be endowed with a considerable nutritive power, and contain as much fatty substances as the stomach will tolerate, and as the digestive functions, habitually, remain intact during a great part of the duration of the affection, we must prudently bear in mind the desires or idiosyncrasies of the patients in the determination of the aliments we allow them.

Independently of the general treatment, which is addressed to the disease itself and its cause, we must also be able to palliate the various

effects, which arise during the course of phthisis, and which, if not promptly checked, might seriously compromise the existence of the patient.

Whenever any one of the complications, which we will soon mention arises, it is necessary that it should be immediately arrested, if possible, by some special modification, while the general alterative treatment is still continued. This plan is the more strongly indicated, when the disorganization of the lungs has advanced so far as to leave no other course open to the physician, excepting that of palliating particular developments of the disease.

The morbid phenomena which follow, as complications of phthisis, are: 1st. Cough; 2d. Dyspnœa; 3d. Hæmoptysis; 4th. Pains in the chest; 5th. Diarrhœa; and 6th, Colliquative sweats.

1st. *Cough.* This is one of the most important complications, which the physician is called upon to relieve. It generally appears at the very onset of the disease, and is paroxysmal in character, often being so severe as to determine vomiting, and almost to suffocate the sufferer. In some exceptional cases, it appears during the first stage, then ceases for a time, only to reappear in the latter part of the second. It is especially troublesome at night, and, by causing insomnia, greatly weakens the patient. It may be stated as a general rule that the intensity of the disease, and that of the cough, are directly proportional to each other.

The cough in phthisis is of two kinds, which differ entirely as regards their nature, and which we must distinguish carefully, on account of the different therapeutical indications which they present. One of them, sonorous, deep-toned, and moist is formed by alternate long inspirations and expirations. It commonly occurs shortly after arising when the bronchi, the benumbing effect of sleep having passed away, begin to regain their sensibility. This cough is beneficial to the patient, since it leads to the expulsion of that material which, if allowed to remain in the bronchi, might increase the dyspnœa. Sometimes it is even necessary to induce the expectoration. But when this becomes too profuse it may be necessary to diminish it, and the most satisfactory results will be obtained from the use of balsams and the sulphites. The second variety, the *tussis firma* of Graves, which may be called a spasmodic cough, is a useless expenditure of energy on the part of the sufferer. It weakens him, induces congestion of the lungs, deprives him of sleep, and brings on profound sweats. It is short, harsh, dry and convulsive in character. If the cough lasts for any considerable length of time, the expiratory muscles become

fatigued, and no longer permit the sufferer to cough, although it may still be necessary. Sometimes very painful points appear in various parts of the thorax and abdomen. Each paroxysm of coughing subjects the lungs to the action of two forces, one active the other almost passive. These organs are thus subjected to a greater or less degree of compression, and this, in turn, influences the circulation in the vessels of the pulmonary parenchyma. The blood, by this compression, is forced out of the capillaries and veins of the lungs, and finally into those of the neck, face, etc., thus causing redness, swelling, etc., of those parts.

According to Fonssagrives, the causes of this cough are as follows: 1st. An abnormally dry condition of the mucous membrane; 2d. A viscous condition of the mucous itself, which causes it to adhere firmly, and thus prevents it being removed by coughing; an abnormally increased sensibility of the integument to the impression of cold; 4th. An irritated condition or impressionability of the muscles of Reissenssen which is aggravated by the near proximity of tuberculous deposits.

The surest remedy for this cough is opium. However, it is very often contra-indicated. We must abstain from giving it when there is any tendency to pulmonary congestion. Opiates, also tend to diminish the appetite and to increase the night-sweats. The extracts of hyoscyamus, belladonna and phyllandrium, distilled cherry, laurel water, and cyanohydric acid, are all useful medicaments from which good results may be obtained, provided that we use them alternately and in increased doses.

2d. *Dyspnœa.* This trouble ordinarily begins to manifest itself about the time the cough commences to annoy the patients, by a feeling of oppression in the middle portion of the chest, though the difficulty of respiration is generally more marked on one side than on the other. The treatment of this complication varies with its causes. These causes sometimes combined, sometimes aiding singly, may be enumerated:

1st. The infiltration of the lung by tubercular matter, and the diminution of the field in which hematosis takes place.

2d. The temporary or permanent congestion, which the presence of the morbid products in the lung develops.

3d. The plasmatic obliteration or induration of the peri-tubercular pulmonary vesicles.

4th. The emphysematous condition which is so prevalent in those suffering from phthisis, and especially in those who are troubled by

cough. The emphysema does not in this class of patients constitute a supplementary collateral respiration, as it has ingeniously but erroneously been called, but is a new cause of dyspnœa.

5th. A very abundant secretion, especially when the weakened expiratory forces are unable to carry on expiration.

6th. The disturbance of the equilibrium which should exist, between the amount of blood sent into the lung by the right heart, and the quantity of permeable tissue which it is to transverse. This form of dyspnœa which is accompanied by an accelerated pulse, and palpitation of the heart, consequent upon the least exertion, is due rather to cardiac than to pulmonary trouble, and is easy of recognition.

7th. Though the dyspnœa is due in the great majority of cases to the foregoing mechanical causes, yet in many instances it is owing to nervous derangement. (*Fonssagrives.*)

These are the cases in which medicine will be found to be of the greatest benefit. The chief indication is to promote expectoration. In order to accomplish this result we may resort to the infusion of polygala, the balsam of tolu, gum ammoniac, mineral kermes, scil litic oxymel, and especially ipecacuanha in nauseating doses. If the dyspnœa be dependent upon nervous trouble, belladonna is indicated This complication may be momentarily relieved by sinapisms to the inferior extremities, burgundy pitch plasters between the shoulders, and the application of leeches to the malleoli.

Experience has shown that the maintenance of tissues, during the course of phthisis, or when the disease has begun to produce its marked constitutional effects, is not only dangerous, but tends to hasten the progress of the disease. What good result can we expect to obtain from the suppuration, caused by a seton, or the application of caustic? In order that we may have any revulsive effect, there must be a stimulus, so that there may be consecutive flow of blood to the part. But where is the stimulant to be found in a suppurative inflammation?

3. *Hemoptysis.* A knowledge of the relations sustained by the bronchi to the pulmonary and bronchial vessels gives an explanation of the manner in which hemoptysis takes place. The pulmonary arteries and veins accompany the smaller bronchi. That a communication exists between all three is shown by the fact that almost all injections, although only a moderate degree of force is employed, may, with the greatest ease, be made to pass from the arteries into the pulmonary veins and bronchi, the inflamed parts alone seeming impermeable. Injections into the bronchi, or into the pulmonary veins,

although the latter do not contain valves, cannot be forced into the arteries, neither can they be forced from the bronchi into the veins. That the bronchial arteries and veins communicate with the pulmonary vessels is proved beyond question by the experiments of Haller, Soemmering, Reissenssen, and Boyer. These facts being premised, together with the knowledge that around deposits of tubercle new vessels are always found, it follows that, since the sanguineous congestion around such a diseased mass must be very intense, the capillaries will become distended beyond their power of resistance, and the blood will find a passage into the bronchi, and thus constitute hemoptysis. When it is not so profuse as to threaten immediate danger, or such as weakens the patient very much, it is to be regarded as beneficial, since it unloads the congested vessels, and in this way prevents, for a time, further inflammatory action, by removing the congested state by which it has been occasioned. There is also a possibility that it prevents, for a time, the further deposit of tubercle. Who has not noticed, in patients suffering from phthisis, the great relief which followed a slight attack of hemoptysis? Hence we must refrain from interfering, as long as the hemoptysis preserves the character of an active hemorrhage, and the pulse, heat of body, color of face, and the amount of dyspnœa indicate that the hemorrhagic molimen is not completely checked. If all signs of congestion cease with the termination of the hemorrhage, there will only remain to the physician to take measures to guard against the return of such congestion; while if, although the hemoptysis has ceased, active inflammatory action still continues, then revulsive treatment, applied to parts distant as possible from the seat of the inflammation, such as blisters upon the lower extremities, leeches to the malleoli, etc., will be indicated. It is only when the hemorrhage has assumed such proportions that the life of the patient is endangered, that the physician should take prompt measures for its suppression.

Hemoptysis may be dependent upon another cause, viz., extensive destruction of pulmonary tissue and ulceration of vessels, which have not been obliterated. This variety may be considered to be traumatic in its origin, and as subserving no good purpose. If possible, it should be stopped at its very onset. Absolute rest, acidulated drinks, rhatany, ergot, tannin, ferric, chloride, etc., are the agents upon which reliance is to be placed; and the dose given should be proportioned to the intensity of the hemoptysis.

How are we to distinguish between these two varieties of hemoptysis? In the first variety there exists an inflammatory molimen, of

which the patient, anxious as regards the condition of his lungs, has perfect cognizance. It also betrays its presence by exterior signs. In the second variety this inflammatory condition is absent, and the trouble manifests itself suddenly and violently.

4th. *Pains in the chest.* Laennec's view, that pleurisy instead of being a cause of tubercle, was far more often the result of this affection, always seemed to me to be the true one. Tuberculosis itself, produces no pain; the pain in the chest experienced by sufferers from phthisis, whether it be in the neighborhood of the scapulæ and clavicles, or at other points of the chest is, without doubt, due to partial pleurisies, or to intercostal neuralgia. If the pain be due to a pleuritic attack, the application of a few leeches, or the abstraction by cupping, of two or three ounces of blood, will, by unloading the congested vessels, give relief far sooner than any other remedy. I have also, often, in my own practice, followed with the happiest results that of Tanner, who advises, that even before this small quantity of blood is abstracted, the effect of fomentations, and extract of belladonna, should be tried. If the pain is neuralgic in its origin, I have seldom failed to give relief by applying a blister containing morphine.

5th. *Diarrhœa.* It is of the utmost importance that this complication of phthisis should be cured, or at least alleviated, on account of its fearfully weakening effect upon the sufferer. Often, in the beginning of phthisis, it is due to a hyperæmic condition of the intestines which is susceptible of cure, but later on, when it is owing to ulceration of the mucous membrane, caused by a deposit of tuberculous matter therein, it is not so amenable to treatment; this, however, should be persevered with, and if a cure cannot be effected, yet the condition of the sufferer can be greatly improved. Of the medicines used in this complication, the English seem to place great reliance upon the aqua calcis given in milk. Tannin combined with some inert substance will often be found to give relief. In my hands rhatany administered in the form of a tea, has seldom failed to yield good results. According to Bichat, the subnitrate of bismuth lessens the amount of local irritation which the fluid contents of the intestine exert upon its sensitive membrane, and thus diminishes the tendency to peristaltic action. Opiates should only be given in the form of rectal suppositories, and even then, in small doses, so that no sudorific effect will be produced, as they generally diminish the appetite. However, benefit is often obtained from injections of vinum, or tinctura opii, as they not only stop the diarrhœa but often increase the strength.

6th. *Colliquative Sweats.* The so-called sweat of phthisis begin-

as a gentle perspiration in the earlier stages of the disease, and only becomes strongly marked, at an advanced period. It is an almost constant symptom. It happens very often that the diarrhœa and night sweats, supplement each other *i. e.*, one attacks the patient for a time, and then subsiding, gives way to the other. Both, however, whether they alternate or exist simultaneously, produce very disastrous effects, destroying as they do, the strength of the patient, and producing the last degree of marasmus. It is during the morning hours, just before the awakening, that the patient is most troubled by these sweats, so that when he awakes, he finds himself almost invariably bathed in a profuse perspiration. It begins at the head and, gradually extending downwards, finally embraces the whole body. It is rare to find them restricted to a single part. Against this almost inseparable accompaniment of the last stage of phthisis, an almost endless number of medicines have been proposed. Among those whose efficacy has been proved, is tannin and the tannate of quinine, zinc, oxyd, and Dover's powder. From the last I have obtained excellent results.

On the Curability of Phthisis by Arsenical Medication.

The maintenance of the nutritive function at the normal standard is to be regarded as the sheet-anchor of salvation. No matter how strong the tendency may be to the development of this disease, if nutrition remains normal the trouble is suppressed or happily modified. When the disease has already but too clearly given evidence of its presence, if we can in any way reanimate the nutritive function, so that the vegetative life can be sustained, then we may not only prevent any further manifestation of its terrible consequences, but the existing trouble may be eliminated.

The pharmacopœia contains a sufficient number of remedial agents; some say too many. However this may be, we believe that the secret of its successful use will depend less upon new acquisitions than in a wise and judicious utilization of its present resources. The remedy that I am about to advocate is not a new one; neither is it a specific, possessing the privilege of being successful where all others fail; but it is an agent by means of which such good results have been obtained that it should not be cast aside, especially as its employment is attended with but very little risk to the patient, as will be demonstrated a little later on.

Latour has said, that "one is phthisical before he has tubercles." This idea is not only true, but far-reaching. Let us bear in mind the morbid disposition which tends to produce them, and the abnormal

condition of the digestive function which causes them to be deposited, and allows them to develop. Let us fear their possible development as soon as severe and prolonged disturbances of the nutritive function manifest themselves.

Hence the great object for which the physician should perseveringly and untiringly strive is, to increase the appetite and strengthen the power of assimilation. Arsenic does both.

Arsenic, on account of its toxicological relations, has, undeservedly, attained a rather equivocal reputation. Many patients are very apprehensive of serious consequences following the continued use of a poisonous agent, or even from taking a very small quantity of it. Since the human mind is guided, not only by words, but also by impressions, it is evident that the latter will, for a long time, exert an unfavorable influence against the use of this agent, though it is far less dangerous than many of the vegetable alkaloids which are so commonly used.

Cyanohydric acid, for example, is so exceedingly poisonous that a single drop of the chemically pure acid is sufficient to destroy life, and yet its use is countenanced, nay, insisted upon, by such high authorities as Drs. Nelligan, Granville, Chambers, Druitt, A. F. Thompson, Donovan, Trousseau, etc., in cases of gastric irritation, nervous palpitation, spasmodic asthma, convulsive dyspnœa, neuralgia, etc.

A more thorough investigation, and a more extended use of arsenical preparations, have demonstrated that this substance, which, in large doses, destroys life so rapidly, in smaller ones not only restores the appetite and stimulates the nutritive function, but, as it were, calls into being all the powers of the vegetative life. It is on account of this property that its use is followed by such favorable results in those affections which are characterized by marked asthenia, and great disturbance of the nutritive functions.

A careful study of the effects of this mineral, in physiological conditions of the system, upon those accustomed to its use, has shown that it renders the system less liable to disease, that it regulates the circulation, and, still further, it develops and maintains the muscular and nervous energy of the organs of the vegetative life. Thus the nutritive function is maintained in its normal vigor, and the patient, being strengthened and invigorated bodily, has this salutary influence of his physical well-being reflected upon his mind. If arsenic can, in small quantities, produce such good results in the physiological state, need we fear harm from it in a pathological one? Besides, as its effects are consecutive, and not immediate, we can obviate any chance of its

producing evil consequences. We can also, by a proper attention to the quantity given, so graduate the effect that any organism, no matter how susceptible it may be, can tolerate it, and hence be benefited by its use. Our own experience of it is such that we may, with Isnard, say, that, notwithstanding the evil reputation which it has obtained, arsenic is one of the most useful and harmless of medicines. It seems to agree even better with children than with adults. Both, however, soon begin to tolerate its use, and the effect, once obtained, continues two, three or more months, or even indefinitely.

Isnard goes still further, and asks, if, in cases where all the concurrent symptoms pointed to an early development of phthisis, the persistent use of arsenic prevented the appearance of any pulmonary lesions, or where, in other cases, it stayed their progress, we are not justified in concluding that, in a great number of patients, it will not only prevent any further development of the disease, but actually cure that already existing.

This agent, according to the same authority, does not act by changing the constitutional tendency of the patient, or by destroying the tuberculous deposit itself; but it exalts the nutritive function, and increases the vital energy, thus placing the economy in a condition the very opposite of that which gave birth to and aggravated the tubercular state.

Need we recall the testimony of Fowler, Robert Milan, and Robert Pearson; the experiments of Boudin, physician-in-chief to the military hospital du Roule, Paris; the cure of epilepsy by Harles, and of chorea by Bayer; the success obtained by Martin Gregory in England, Babington, Hughes, Alexander, in the treatment of angina pectoris; in the treatment of asthma by Koepl; of chlorosis and bronchorrhœa by Trousseau?

Dioscorides gave arsenic to patients who had collections of pus within the thoracic cavity. Slwogt, professor at Jena (1700), and after him, Melchoir Frick of Ulm, used it in intermittent fever. Dr. S. D. Gross gave one-half of a grain of arsenious acid a day in neuralgia of the bladder. Drs. Hooper and Frampton prescribe the liq. potass. arsen. in epilepsy. Dr. Druitt and Dr. F. W. Mackenzie use it in hay-fever. Dr. J. Hogg, of London, uses it in diabetes. Bouchut has shown that arsenic is extremely useful in the various forms of scrofula. Loude, Frahn, Isnard, Bouchut, Gourbeyer, etc., have used arsenic in pulmonary tuberculosis with relative success. Beddoes, according to Girdlestone, treated successfully a patient suffering from phthisis whose two brothers had died of consumption.

Let us quote Trousseau: "Our experiments have been made upon sufferers from phthisis, and patients afflicted with chronic catarrh of the larynx. In the former we have not effected cures, but we have obtained at least very extraordinary suspension of accidents, in a disease in which nothing is able to retard the fatal onward march. We have seen the diarrhœa moderate, the hectic fever diminish, the cough become less frequent, and the expectoration assume a better character; but we have not cured. However, the results that we have obtained are an encouragement for us to proceed; and nothing militates against the belief that, if the affection be limited, we may obtain a complete cure."

"We wish all to believe that in our experiments with arsenic, no error of diagnosis has been committed. We are granted, at least we hope so, enough hospital experience, and practice in auscultation to believe that in a confirmed phthisis, and that in the second stage, we have not mistaken the pulmonary lesions, and made an error from considering alone the general symptoms, which preceded or accompanied the affection; besides our examinations were made in the presence of a large number of pupils who followed our clinic, and who, most of them, had already received the degree of M. D., or were in the last year of their studies."

Isnard reports three cases advocating the use of arsenic, which are of real interest to us. The first is that of a patient aged forty-five, who was suffering from hereditary (?) phthisis. He had softened tubercles in both lungs, hectic fever, nigh sweats, etc. During three months arsenious acid was given; at the end of that time the progress of the phthisis was checked, and two years afterward, no traces of the disease could be found. The second case possesses even greater interest. It is that of a young woman, whose mother had died of consumption, and who herself had manifested unequivocal symptoms of that disease after her first confinement, and an ineffectual attempt to nurse her child, conditions which we know do not stop the progress of tuberculosis. A year later under arsenical treatment, she had regained, to all appearance, her health. If that period is too short to admit of an absolute cure, the result obtained by the use of arsenic is none the less striking. The third case related by Isnard, is that of a young man of twenty-one, suffering from unilateral caverus, and in whom these lesions complicated with intercurrent pleuro-pneumonia and pleuritic effusion, had produced a veritable marasmus. Here the cure was less complete, but the fact of the ability of arsenic to stop the progress of phthisis, or, at least to retard its onward march is none the less evident.

At present it is difficult to say what the future of this medicament will be, but its constancy, effectiveness, and power of producing the required result commend it to the serious attention of practitioners.

In our hands its results have been most satisfactory, and without discarding the various medicines ordinarily employed to rebuild the tuberculous organism, we have arrived at the conclusion that arsenic should be placed in the front rank. We have given it simultaneously or alternating with cod liver oil, preparations of cinchona, ferrum iodide, and the alkaline hypophosphites.

In a great majority of the cases in which favorable results were obtained, the patients were subjected to a treatment which was more or less complex in its character, so that it would be impossible to tell what medicine had produced the desired result. In four cases, however, arsenic alone was employed, and then only when all other treatment had failed, and in these cases very satisfactory results were obtained.

Case 1.—Mrs. D. of Toronto, visited me in the early part of February for aphonia. She, at the same time, related to me the condition of her sister as follows: Emma is now nineteen years old, she menstruated at thirteen. For the last seven months she has been in bad health, and during that time her appetite gradually diminished. She began to grow thin and her menses stopped entirely. Soon there was oppressive pain in the chest, cough, and from time to time shivering. Father died two years ago (his death was accidental); mother is strong and healthy.

On being asked to give an opinion and advice, I requested her to write home and have the family physician examine her sister. A week later she communicated the following:

"On the right side the chest is perfectly sonorous, the respiratory murmur normal, perhaps a little exaggerated. On the left side superiorly in front of the supra-clavicular fossa, as in the infra-clavicular fossa, behind in the supra-scapular and in the whole infra-scapular space, percussion denotes a diminished sonority. Auscultation is more positive. Almost complete absence of respiratory murmur replaced by a well defined crepitating sound; no pectoriloquy."

In the absence of more definite information, and with the reliance which I had already in the power of arsenical preparations, I directed her to take arsenious acid in pills ($\frac{1}{50}$ grain), beginning with two a day and gradully increasing the dose, until she took daily one-sixth of a grain of the medicine. This was in February. A little more than a week later Mrs. D. returned home, and wrote me that she thought

Emma worse from taking the medicine; that she had taken to her bed and was falling off fast; that she had diarrhœa, a good deal of night sweats and no appetite at all, and begging me to send her some other medicine. This was not very cheerful information. However, I directed her to keep on using the pills as ordered. March 20th, another communication stating that Emma was less weak and had been able to go around the room twice during the last few days, and that she began to have an appetite for food. April 15th, Emma has walked out for the first time in three months. The cough has diminished considerably; the red spots on the cheeks have disappeared little by little as she gained strength.

When last heard from (July 29th), Miss Emma R. had gone with her mother to St. Catharines, feeling perfectly well, and eating enormously.

Case 2.—Mary B. was twelve years old when I first saw her. Near old cicatrices on the neck, she had two enlarged glands, of which one was ulcerated and the other on the point of being so. The first engorgements had shown themselves at the age of four years, and lasted till she was seven. They then, after an interval of five years of apparently good health, returned. Instead of the preparations of gold which the child was then using, I subjected her to arsenical treatment, beginning with one-fiftieth of a grain. The enlarged gland suppurated, but healed very rapidly. To-day, twenty-two months after the cure, no new enlargement has appeared to deny the good effect of arsenic. In this case the use of the arsenic was continued for more than six months, without any apparent trouble arising from its use.

Case 3.—In August last I was called to see Mr. R. Fitful, like all sick men, he had just discharged his last medical attendant, the third within a year. His face was pale, and showed traces of great suffering; respiration harsh, twenty-four to twenty-six per minute; pulse, 120 to 124; cough hollow and deep; expectoration abundant and purulent in character; hectic fever. Although he spat no blood, the sight of that great emaciation, the sweat which scarcely ceased even in the day, led me to prognosticate a fatal termination.

Though I feared but little could be done, still I thought, why not try arsenic? The patient strongly objecting to any kind of pills, which he said would choke him, I prescribed an aqueous solution of arsenious acid, each fifty grammes of which contained one centigramme of the acid. Within three days the intensity of the fever had abated considerably. Notwithstanding the high pulse, the skin, from being

dry and burning, soon became fresh and natural, and the night sweats steadily diminished. At the end of the first week the palpitations of the heart, which had alarmed the patient so much, under the sedative influence of the arsenious acid, had almost entirely ceased. From day to day the change for the better steadily manifested itself; the appetite returned; the expectoration became less abundant and less purulent in character. There is still a little cough; but the patient is gaining strength rapidly.

Case 4.—Lottie C., a seamstress by occupation, states that her cough began last winter, but it is only during the last three months that she has been obliged to give up work. She experiences a sensation of weight on the left side of the chest; expectoration sometimes streaked with blood, and generally thick and viscous; she has night sweats, and her emaciation is very marked. Auscultation reveals a relative diminution of the respiratory murmur, with sibilation and friction sounds in the left lung. At the apex of this lung, both anteriorly and posteriorly, the percussion sound is dull; voice resonant.

At the beginning of the treatment, she complained for two days of colic and slight diarrhœa. However, the treatment being continued, the cough, at the end of the second week, had diminished considerably. Two months afterwards her appetite was excellent, her strength greatly increased, the color of the face natural, and she resumed her work.

This power of arsenic to rebuild functions which have been almost entirely lost, is very remarkable. That it is able to do this, we have shown by the preceding cases, and, moreover, have supported our statement by the testimony of high authorities. To me it seems that, in increasing the nutritive function and restoring the appetite, it fulfils one of the most important indications, viz., to retard the decline of nutrition, and thereby prevent physical loss.

Even if we admit that the results obtained by the use of arsenious acid are but momentary, yet we must acknowledge that this medicine is able, in the last stages of tuberculosis, to do what no other one can, strengthen the power of the nutritive function, and remove, for a time, at least, all danger arising from colliquative accidents.

ARTICLE X.

Veratrum Viride. By D. W. JONES, M. D., of Franklin county, N. Y.

In regard to the drug under consideration, I venture to make the assertion, that however well established its therapeutic value, or well defined its physiological effects, a great majority of our profession fail to recognize its importance, or avail themselves of its potent properties. There are various reasons for this. By some it is regarded as too powerful a remedy, under any circumstances, to be left at the bedside of a patient. Having seen its effects culminate in apparent general prostration and diminution of vital action, they become intimidated in their use of it, and, if they prescribe it at all, it is in infinitessimal doses, which fail to produce its specific effects, and so the remedy, in their hands, falls into desuetude; and any practitioner within the circle of such a physician's influence, whose faith in the drug *cannot* be shaken by adverse testimony, has diminished confidence in the use of it. There may be other causes which conduce to this result, depending upon variations in the method of preparation, resulting in degrees of strength, or from extreme differences in the susceptibilities of different constitutions.

After an experience of eight years with the drug, during which time it has occupied a prominent place in my "*armamentarium medicum*," I can confidently recommend it as possessing the most powerful remedial effects, adapted to a greater variety of cases, the most certain in its action, the most satisfactory in its results, and, when judiciously employed, as safe in its administration, as any remedy in the materia medica. But I wish in this paper to speak of two classes of cases only, to one of which it is peculiarly applicable and remedial, and to the other, when used to the same extent, deleterious, viz., the phlegmasia and the zymoses. Of the latter class, I wish to refer particularly to the exanthemata.

Of the peculiar adaptability of veratrum viride to inflammatory affections, and of its powerfully remedial effects, there can be no doubt in the minds of those who have thoroughly tested its therapeutic value. And, if beneficial in this class of diseases, then, *a priori*, it is adapted to the majority of the diseases which afflict mankind; for, although I do not hold to the Bruessaian theory of disease, ascribing all diseased action to a local inflammation, yet it is, beyond all com-

parison, the most important of diseased conditions, either "attending or forming an essential part of the great majority of diseases, and constituting their chief danger."

Of its *modus operandi* in the disease under consideration, the most plausible theory is based upon its power to diminish the action of the heart and contractility of the arteries. It is true that inordinate action of the heart is not the cause of inflammatory diseases, but simply the reaction of the system from some real irritation. And one of the most prevalent ideas in medicine has been the reduction of the heart's action in these diseases. For this purpose blood-letting has been the sheet-anchor; antimonials and digitalis, adjuvants. Veratrum viride accomplishes this desired object safely and effectually, acting as a sedative to the circulation, without the loss of vital fluid attending venesection, or incurring the risk of cumulative action from digitalis, or lowering of the vital powers consequent upon the administration of the antimonials. On the contrary, while the circulation is depressed, the intelligence and vitality of the patient are enhanced, and, when gradually brought under the influence of the medicine, the patient is sure to "feel better," and, at such times, I have repeatedly been told that my services were no longer needed, as the patient was "well." Veratrum viride diminishes the force and frequency of the heart's action. How this is effected, whether primarily through the pneumogastric and secondarily through the sympathetic, or primarily upon the latter; whether affecting the nerve centers, the periphery, or the whole nervous track, is, as yet, mere hypothesis. Of the *fact* we are certain. Then, what effect does this produce in an abnormal state of the system; or, considered in regard to this specific lesion, what are the results of its administration? In order to fully comprehend its curative powers in inflammatory affections, let us glance for a moment at the theory of inflammations. The one which has received the most general support has been based upon the hypothesis of "vital expansibility" in the capillaries, whereby, upon the application of an irritant, either immediately to the part, or mediately through the intervention of the circulatory or nervous system, dilatation takes place in the capillaries and an increased quantity of blood circulates through the diseased part in a given time; the action of the heart is accelerated, the *vis a tergo* consequently increased, and the disposition to congestion still further augmented. And it is by this constant pressure from behind that the train of symptoms in a phlegmon, whether of the areola tissue upon the exterior of the body, or affecting any of the vital organs, is forced rapidly to the point where

exudation takes place, and from which is to follow either resolution and absorption, or suppuration. Now the peculiarly beneficial effects of veratrum are experienced at that point where, in the initiatory stages of an inflammation, congestion in the part has taken place from "vital expansibility," and stagnation with effusion has not yet been reached. Here is where veratrum has the power to abort an inflammation; and that it has this power none can deny. If quinine has any power over the periodical and miasmatic diseases, if arsenic exerts any curative influence over cutaneous eruptions, if opium can produce sleep, or castor oil purge, just as surely and effectually, when properly administered, will veratrum control and abort the phlegmasia.

But it is not simply by diminishing the *vis a tergo* which other arterial sedatives to a certain extent have the power to do, but also by causing a contraction of the arteries.

The reduction of temperature, which follows the administration of veratrum, indicates that the metamorphosis of tissue by which heat is produced and sustained, is interfered with, showing an influence over the vasa motor system. This influence causes contraction of the muscular coats of the arterioles, and still further reduction of the flow of blood in the part afflicted. These statements may appear to conflict with the experiments of T. Wharton Jones, showing that when the *vis a tergo* of an artery is suddenly diminished, congestion in the capillaries and venous radicals, to which the artery leads, is established. But we must consider that the means he used were mechanical and the obstruction sudden and complete. And we must also bear in mind that in inflammations, congestion, or the tendency thereto, is already established; and even though the suspension of the "force from behind" was suddenly effected, the usual consequences could not follow, the results having already been forestalled by the disease.

Veratrum viride has, by some writers, been recommended in all diseases with increased frequency of pulse. Says one writer upon the subject: "Veratrum is a heart medicine, and the indications for its use should ever be the condition of the heart, rapidity of the pulse. This and nothing more." In all diseases of all ages, and under all circumstances, no matter how excited the system or how prostrated the patient, rapidity of the pulse is the indication for the use of veratrum. Again: "In scarlet fever it has extraordinary powers," etc. Now, in the *exanthemata* I regard it as very important that great care should be used in prescribing this remedy; care not to carry the effects of

the remedy so far as to entirely destroy the balance between the arterial and venous circulation. In scarlet fever the great rapidity of the pulse suggests at once the most powerful arterial sedatives at our command, and we naturally turn to veratrum; but after an experience with the remedy in several severe epidemics of scarlet fever and measles, I am convinced that powerful arterial sedatives, and particularly the one under consideration, are contra-indicated, except where the violence of cardiac action threatens the congestion of some vital organ or to procure its partial effects in allaying the excessive arterial action accompanying scarlet fever. In such cases the remedy should never be continued until marked nausea is produced, this symptom being indicative of the full effects of the remedy; but simply to obtain a diminution of the force and rapidity of the circulation. In the zymotic diseases, the "concoction," if I may be allowed the expression, of the virus culminates in a violent disturbance of the system. The conservative power of the organism is exerted to eradicate from the system the materies morbi of the disease. Veratrum viride administered at this time, with a view to produce its specific effects in the same manner as when administered to avert an inflammation, would interfere with the elimination of the poison, establishing a condition of things exactly the reverse of that which nature effects, and the functions of the vascular, nervous and glandular systems, by which the *vis medicatrix natura* attempts a cure, are deranged, and the poison being retained in the system is liable to act with concentrated force upon some vital organ, as the lungs or brain.

In the advocacy of a new remedy, due allowance should always be made for the zeal of him who discovers its virtues and brings it to the attention of the profession, for he will not fail to see beauties, powers and virtues where a less prejudiced mind would discover nothing extraordinary. But that time, with veratrum, has passed, and although the communications of Drs. Osgood and Norwood were characterized by all the extravagant encomiums by which such discoverers are usually actuated, yet contrary to the general experience their statements, have been abundantly verified by years of practice, and a yet more thorough knowledge of the drug will lead to a higher appreciation of its wonderful powers.

ARTICLE XI.

Anæsthetics. By Edward R. Squibb, M. D., of Brooklyn.

Time, that tries all things, has disposed of many of the issues which arose in the early application of anæsthesia, but has entirely failed in producing that universally applicable anæsthetic, that philosopher's stone for which the alchemists of the profession still vainly search, namely, an agent which shall be potent, but potent only for good. This physical impossibility seems to be to the medical profession what perpetual motion is to mechanics, and time wears away such heresies very slowly. It would, doubtless, be better for the profession and for mankind, if the anæsthetics already known were better studied in relation to their special adaptations, and were applied with a more wise discrimination.

The condition of perfect anæsthesia is one of the most grave and frightful conditions of life, and, by suspending more than half of vitality, it comes so near to death that it is wonderful to reflect how near that boundary line can be approached and yet be so rarely passed. Familiarity with anæsthesia, and a mere distant view of its accidents, lead the profession to plunge their patients into it with too much recklessness. This condition, now so familiar to all, when seen but a few years ago, never failed to excite the gravest apprehension; and even now, when seen as the effect of other narcotic poisons, causes much anxiety, and secures the most active measures for relief.

So much does it become a matter of personal or local habit or practice to use one or other anæsthetic exclusively, regardless of risks or warnings, and to defend this exclusive practice against all who doubt its wisdom, that each little circle in the profession, or each man, requires, as in the instance of this writer, some grave accident to awaken a sense of proper responsibility, and teach the wisdom of discrimination.

The roughly-expressed though perhaps practical condition essential to anæsthesia, is diminished oxidation in the sensorium; and the primary object is, to confine this within the limits of safety. It is a kind of partial suffocation or asphyxia, occurring not in the organs of respiration and circulation primarily, but far back of these in the tissues, where the vital act of oxidation occurs. The air-passages normally admit oxygen, and the blood takes it up and carries it, but

carries with it an agent which prevents its assimilation in the tissues which preside over vitality. To diminish this assimilation seems to constitute anæsthesia. To prevent it is death by narcosis. Hence the only line of safety in practice, in the present state of knowledge, is to regard the difference between anæsthesia and death as a difference in degree or quantity only. The condition may be partial, full, profound or fatal, but with no distinct boundary lines between the degrees. The two intermediate degrees constitute anæsthesia proper, and the first of these is desired in medicine and surgery. In the production of this anæsthesia, the more powerful, prompt and efficient the agent, and the more impressible the individual organization upon which it acts, the greater the liability to overleap the intermediate stages or degrees, and unexpectedly extinguish life. This seems but common sense, and physicians are familiar with the principle in the toxic influence of all acute diseases, though they often fail to apply it in this most acute of all diseased conditions, wherein the issues of life and death are narrowed down, not to a few hours, but within a few minutes. Add to this the fact that this condition rests with the physician whether to produce it or not, and it is difficult to understand how its importance can be over-estimated.

The agents commonly used to produce anæsthesia, and now called anæsthetics, were formerly all classed as diffusible stimulants, because in studying them writers had not gone beyond their prominent primary effect. Now, however, this stimulation is regarded as the first of four degrees or stages into which their total effects may be usefully divided; and it is remarkable that the first and last of these stages are in such absolute antagonism that, studied separately and independent of a known cause, the agent producing the one would naturally suggest itself as an antidote to the other. The most important relations between these agents and the different degrees or stages of their effects are quantity and potency or inherent strength, and these are again but relative to the susceptibility upon which they act. A fluid ounce of alcohol would stimulate an adult, and four fluid ounces would narcotize him, but with distinct intermediate stages. The same quantities of the same agent would destroy an infant by narcotism without any distinct intermediate stages from either dose. One-eighth of these quantities of chloroform would produce similar results from its inherent potency in one-eighth of the time, and the rapidity of its action would amount to suddenness, and hence to the obliteration of intermediate stages. The more potent the agent the shorter is its course, and the fewer and less distinct the intermediate

steps by which the ultimate result is reached. Add to this the circumstance that this potency involves the risk of incidental or accidental complications which tend to precipitate the normal calculated results.

Narcosis is progressive, and may advance symmetrically or asymmetrically; that is, all the vital functions may be equally and uniformly depressed to obliteration, or the narcotic influence may in any part of its progress be concentrated upon some one vital function or organ and thus interrupt the progress by a short-cut to the end.

All this is intended to exhibit anæsthesia as a stage more than midway in a pathological course, the natural terminus of which is extinction of life; and that to produce and maintain this stage of narcosis with safety is a very delicate question of the application of means to an end, the grave importance of which is too often disregarded upon insufficient grounds. The accomplishment of any given amount of work with the utmost promptitude and certainty renders an excess of power necessary, and the greater this excess of power the more difficult it is to control the power with safety to the work. This just relation between the work to be done and the power which is applied to do it involves the whole question of choosing an anæsthetic, and equally forbids the arbitrary or habitual use or exclusion of either of the well known and well tried agents, while it imposes a grave responsibility, first in the selection and then in the application, of the special agent selected.

Dr. Augustus Waller, of Geneva (see *The Practitioner* for December, 1870), proposes compression of the pneumogastric nerves in the neck as a safe way of procuring temporary anæsthesia in some cases. Should any such mechanical means as this ever be found practically successful, even in a small proportion of cases, it would be a great gain for minor surgery.

The anæsthetics that have been well tried up to the present time are three in number, and with proper discrimination in applying each of these to its appropriate uses only and proper skill in using each, all the legitimate purposes of anæsthesia can be well accomplished with reasonable safety. These three anæsthetics are nitrous oxide, ether and chloroform, and they are all in extensive daily use in this country at this time.

It happened, however, that after the application of chloroform to anæsthesia by Sir James Y. Simpson, of Edinburgh, the tide of popular favor ran so strongly in favor of this anæsthetic that it rapidly took the place of all others, while anæsthesia was yet a novelty.

Hence by far the largest proportion of the experience in anæsthesia has accumulated from the use of this agent. Within the past two years there has been a reaction in this country in favor of the safer anæsthetics, and it is the primary and almost the only object of this paper to favor this reaction which now tends to give to each anæsthetic its proper place in anæsthesia. At one time chloroform was almost as exclusively used in this country as in Great Britain. Now, however, it is probably used in more than half the cases, or at least as often as all other anæsthetics together. Various mixtures of chloroform and alcohol, and chloroform and ether, may be used in a twentieth part of the total cases, and nitrous oxide in another twentieth, while ether alone may be used in four-tenths of the total cases. These proportions should be, and probably will ultimately be, so far reversed that ether will be used in six-tenths of the cases, nitrous oxide in three-tenths, and chloroform in one-tenth of the cases to which these three agents are applied.

Nitrous oxide was the first anæsthetic; and the safety and certainty of its effects, even in inexperienced hands, for all momentary operations, and the promptness with which persons recover from its use, render it perhaps the most important of all anæsthetics, because destined to relieve a greater aggregate amount of pain with greater safety than any other agent.

Its practical application to dental surgery by Horace Wells, of Hartford, Connecticut, in December, 1844, was the commencement of anæsthesia; and, hence, in the opinion of this writer, Horace Wells is in every good practical sense the discoverer of anæsthesia, and deserves both the honor and the reward.

Upon the general principles above mentioned it is very certain that any agent capable of producing anæsthesia is capable of causing death, and is therefore dangerous; and nitrous oxide has doubtless caused death by its primary influence. But this is so very rare in the many thousands of cases in which it has been used that its record of comparative safety is practically complete. The dental profession deserve the credit of all that has been done in the way of utilizing the advantages of nitrous oxide. After the reverses of Horace Wells, it was not until the notoriety and fashion of using ether and chloroform had worn off the novelty through many years that the use of nitrous oxide began to revive; and yet, in the short time during which it has now been popularly used in this country, the number of administrations have so rapidly increased that they can now hardly be less than twenty thousand per annum, but may be much greater, and this

almost exclusively in dental surgery. It is quite time that the medical profession should awake to the practical advantages and applicability of nitrous oxide to the momentary operations of minor surgery. These operations so far outnumber the greater ones that they outweigh them in the aggregate amount of pain involved; and if the surgeon considers the safety and saving of pain to his patient first, and his own convenience in operating second, he will hesitate before passing over such an agent as nitrous oxide.

It does not appear to be well adapted to any other than momentary operations, chiefly because, to obtain complete anæsthesia from its use, it must be breathed nearly or quite pure, and therefore entirely cuts off the air-supply, and arrests the vital process of oxidation or aëration of blood in the lungs. Under these circumstances, when the store of oxygen which the blood contained at the commencement of the inhalation is exhausted, death must supervene. This being rather a negative than a toxic influence, however, the readmission of air to the lungs, very speedily corrects it, provided the narcosis has not progressed so far as to arrest the mechanical movements of respiration or circulation. A patient may, doubtless, be as effectually drowned by nitrous oxide as by water, and the resuscitation from partial drowning by it involves the same principles of treatment.

The great obstacle to the more general application of nitrous oxide as an anæsthetic are the inconveniences, rather than difficulties of obtaining, keeping, and administering it; but now under its rapidly increasing use these obstacles are as rapidly being overcome. If but half the intelligent pains and labor had been expended upon it that have been given to carbonic acid or soda-water, its advantages to mankind would have been better appreciated.

In England the gas is liquefied by cold and compression, and is offered for sale in small iron bottles arranged with stop-cock, etc., so that the gas is liberated simply by relieving the pressure in the bottle of liquid. The gas is received in bags of India-rubber as wanted, and is administered from these. The enormous pressure of fifty or sixty atmospheres, or about eight or nine hundred pounds to the square inch, is required to keep it in the liquid state, and this renders it doubtful whether any such plan of using it can ever become generally applicable. Some plan by which it may be held in solution, or be compressed and held under a pressure of say one or two atmospheres, would be much more practical, and will sooner or later be accomplished.

The original apparatus for making and keeping the gas has now,

however, been, so simplified and so cheapened by the dental profession as to be managed by the most ordinary intelligence. The entire apparatus for making and keeping the gas in quantities of forty and fifty gallons is now sold at the depots for dental supplies at a cost of from forty-five to seventy-five dollars, in proportion to the degree of ornamentation, and one pound of nitrate of ammonia, costing about fifty cents, yields from twenty-five to thirty gallons of the gas. An average of about seven gallons of gas is required for complete anæsthesia, and from one to two minutes is commonly necessary to effect this. The anæsthesia is of about one to one and a half minute in duration, and passes off almost entirely in three or four minutes.

It is hardly too much to say that every hospital and dispensary throughout the country should be supplied with this apparatus until a better be devised, and should use this anæsthetic in the large class of cases to which it is appropriate. For a full description of apparatus and mode of managing both the apparatus and the administration, see Thomas's "Manual of the Discovery, Manufacture, and Administration of Nitrous Oxide," published and sold by S. S. White, Philadelphia and New York, price $1.25.

The next anæsthetic in chronological order, but by far the most important of all, is ether, still sometimes improperly called "sulphuric ether," even by those who should know better. The great importance of ether as an anæsthetic lies in the fact that it is the most generally applicable of all, and that it is practically safe in common use. Few doubt the sufficiency of its power to produce complete anæsthesia with practical safety to life in its primary influence, the chief objection to it being the supposed difficulty of application. And in this difficulty with ether, rather than in any better effect from chloroform, may be found the reason why it does not more rapidly take the place of the more dangerous agent in general practice.

This difficulty in successful application is not real in any sense that should be accepted by an intelligent profession whose skill involves human life, simply because it is surmountable by ordinary average intelligence and skill. The common objections to the use of ether are, that it is slow in its operation; causes a long troublesome stage of excitement; and that after these disadvantages have been submitted to it, it often fails to produce a sufficient anæsthesia from any reasonable quantity that may be given. It is not uncommon to see, even in what should be the expert practice of large hospitals, four, six, and even eight fluid ounces of ether used in the effort to get patients through the stages of intoxication, and a pound or more is

not unfrequently consumed in a single operation. The patient and by-standers, and indeed the whole apartment, become charged with ether-vapor, to such an extent that the air must be nearly explosive, and it is rather remarkable that some accident from fire has not occurred. These efforts often require ten to twelve minutes, and then have to be supplemented by the use of one or more strong men to control the patient's struggles, and enable the operator to get unsatisfactorily through his work within a reasonable time. In not a few cases, the desirable third stage of narcosis is not reached at all.

Now, with all due deference to the well-deserved reputation of many surgeons under whose supervision and control this occurs, it is all due to mismanagement, and is easily avoided.

Dr. John Snow, of London, in his valuable book "On Chloroform and other Anæsthetics," published in 1858, covers the whole ground upon this subject, with an accuracy which time has but served to confirm. He states that the quantity of ether necessary to produce the third stage of narcosis is between four and five fluid drachms in an average of cases; but that, inasmuch as fully one-half is thrown back from the lungs, about one fluid ounce is usually inhaled by an adult in becoming insensible. He usually placed two fluid ounces in his inhaler, in order to have an excess in store, and this was commonly sufficient if the operation was not unusually protracted. He usually rendered adults insensible in four to five minutes, and children in two to three minutes; and never failed to produce complete insensibility in any one instance, in one hundred and sixty-four applications, which embraced all the great operations of surgery several times. These results were obtained from the use of what is known as "Snow's Inhaler," but which Dr. Snow ascribes to Dr. Francis Sibson, and Mr. Julius Jeffries; and from ether which was at least ten per cent more dilute than that now in common use in this country for anæsthetic purposes the specific gravity being 0.735 at sixty degrees Fahrenheit, instead of 0.728 as it should be.

More recent observations, and notably those of Dr. Frederick D. Lente, formerly of Cold Spring, now of New York city, exhibit similar results without a special inhaler. This accurate and skillful observer, and earnest advocate for the general use of ether in anæsthesia, gives some of his experience in the *American Medical Times* for 1862, vol. iv., p. 356, and for 1863, vol. vii., p. 95. The results obtained in this published record were by the use of the cone, extemporaneously formed of coarse towels for each application, and with ether containing not over six or seven per cent of alcohol and water, s. g.

0.725 to 0.728 at sixty degrees Fahrenheit. The time required to produce anæsthesia, or the third stage of narcosis, the quantity of ether consumed, and the operations for which the anæsthesia was induced, are as follows: two and one-half minutes one and a half fluid ounce, trephining; five, four, three, and two and a half minutes, sixteen, twelve, twelve and ten fluid drachms, four amputations of the

Fig. 1.

Fig. 2.

Fig. 3.

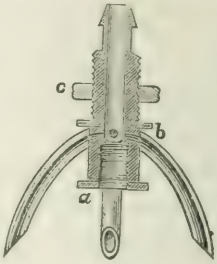


Fig. 4.

Fig. 5.

Fig. 6.

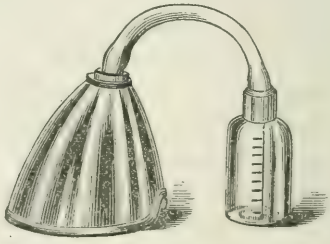


Fig. 7.

ETHER INHALER OF DR. F. D. LENTE, OF NEW YORK CITY.

Fig. 1 Skeleton of wire with brass nipple at the top, and bound round at the bottom so as to form a cushioned rim for close application to the face and notched out for the nose.

Fig. 2. A flannel bag to fit over the skeleton frame as far down as the cushioned border.

Fig. 3. A brass mounting to screw on to the nipple of the skeleton frame.

Fig. 4. The same brass mounting, shown in enlarged section, to screw on to the nipple of the skeleton frame by the lower part (*a*). The upper projection is bored out down to *b*, and three equidistant small brass tubes, curved to suit the convexity of the skeleton frame, are made to communicate with the bore internally so as to make a continuous passage from the apex of the nipple to the end of each small tube.

Fig. 5. An impervious cover of tin notched out for the nose, which is put on over the brass mounting, and held in place by a screw collar (*c*), *fig.* 4.

Fig. 6. An ordinary phial of about four fluid ounces' capacity, marked in divisions of half a fluid ounce, with a horn cap and nipple cemented on to the mouth and neck.

Fig. 7. The complete inhaler ready for use; the face-piece and bottle connected from their respective nipples by a short piece of India-rubber tubing.

thigh; two minutes, seven fluid drachms, extraction of a ball from the tibia; four minutes, twelve fluid drachms, searching for a ball in the knee-joint; three minutes, sixteen fluid drachms, amputation at the knee; thirty seconds, six fluid drachms, incision of an infiltrated scrotum; seventy seconds, ten fluid drachms, exsection of the shoulder-joint; sixty-two seconds six fluid drachms, exsection of the humerus; three minutes twelve fluid drachms; counter opening of the knee for the extraction of a ball; three minutes, sixteen fluid drachms, searching for a ball in the thigh. Average time for thirteen administrations less than three minutes, average quantity less than twelve fluid drachms. The second list published by Dr. Lente embraces thirty-two complete cases, a large proportion of which are for minor operations (nine for tooth extraction), in which the average time was but little over three minutes and the average quantity less than nine and a half fluid drachms. Subsequent to this experience this same observer devised an inhaler, which for simplicity of construction and management, and for effectiveness and economy in results, leaves very little to be desired. The description and cut of this instrument, which are reproduced here, are copied from the *Medical Record* for May 1, 1866, vol. 1, p. 114.

"It consists first of a light wire, helmet-shaped frame-work (figure 1), so formed at the base, which is bound with a soft cushion, as to fit over the nose and chin, but not to cover the eyes. At the apex of this cone is a small screw; over this frame-work is a cone of double flannel (figure 2), a hole at its apex allowing it to slip over the screw. Over this is screwed an arrangement, shown of proportionate size by figure 3, and in enlarged section by figure 4, consisting of a short tube about half an inch in diameter, and branching into three small tubes, so arranged when adjusted as to embrace and open upon the flannel cone at equal distances from each other, at about one-third of the height of the cone. Over this tube is slipped a cone of tin, or of some impervious material (figure 5), not easily acted on by ether. This cover is kept in place by a nut screwing over the tube; over the end of the latter is drawn a rubber tube about half an inch in diameter, the other end of which is to be slipped over the neck of a suitable bottle containing about four ounces of ether as soon as the inhaler is required for use, or over the end of a metal tube fitted to a cork which may be attached to any bottle; but the other mode of connection is the safer.

"Having explained to the patient the manner of breathing, viz.: to inhale as rapidly and fully as possible as long as he retains conscious-

ness, and not to be alarmed at any unpleasant sensations which may be excited at first, the cone is fitted as accurately as possible to the face; the wire and tin being bent a trifle, if necessary; and, as a *sine qua non* of the successful use of the instrument, I insist that, having been once placed on the face, it is to be kept closely applied and never once removed ever so little until anæsthesia is complete."

This description is followed by details of the application and advantages of the inhaler, and remarks on the use of ether, which may be referred to with advantage. This instrument, under the title of Dr. Lente's inhaler, may be had of the New York surgical instrument makers.

Still later, Dr. D. H. Goodwillie, of New York city, published in the *Medical Record* for December 2, 1867, vol. 2, p. 453, an account of an inhaler devised by him, wherein a two-way stop-cock enables the manipulator to regulate and alter from time to time the proportions of any anæsthetic vapor and the air in the inspired mixture. This inhaler is patented, however, and therefore does not deserve professional consideration.

The small experience of the writer, which is unenumerated, and therefore hardly worth mentioning, is less favorable than that of Dr. Snow and Dr. Lente. The average time may perhaps be safely estimated at six minutes and the quantity of ether at twelve fluid drachms to produce anæsthesia, and sixteen to eighteen fluid drachms as the average total quantity for operations, excluding those which require less than two minutes. This is mentioned not as the result of expert skill with a good inhaler, but of ordinary intelligence and common sense, with a simple home-made contrivance, to be referred to hereafter.

Dr. Snow states that ether is required in eight or ten times the quantity that chloroform is, but that as ether anæsthesia is more persistent than that by chloroform and easier maintained, the disproportion in quantity is reduced in proportion to the duration of the anæsthesia. Dr. Snow also states that the proportion of chloroform vapor in the inspired air should be from four to five per cent, but with ether the proportion of vapor must be about thirty per cent to secure anæsthesia within a convenient time. Time and experience have abundantly confirmed these statements, with the very important addition that, while this proportion of chloroform vapor cannot be greatly exceeded without largely multiplying the risks, the proportion of ether vapor may be exceeded very far, even to approaching asphyxia by exclusion of air, with comparatively small risk.

The difficulty with chloroform is, to secure a sufficient and uniform dilution of the vapor inhaled, but with ether the difficulty is to secure a sufficient concentration, or, what is the same thing, to prevent undue dilution. Both agents will occasionally suddenly suspend the respiratory movements, but while the circulation continues, these are restored by new vital power. Chloroform, however, and chloroform alone, is liable to suspend the heart's action, and when this occurs suddenly and completely, the source of vital power is cut off, and the danger becomes extreme. The vapor of either agent may be so administered as to produce only excitement and intoxication; or may be so administered as to cause death by asphyxia, as in drowning. Neither vapor is irrespirable: that is, the vapors do not cause spasmodic closure of the glottis, and this, perhaps, chiefly because their primary effect is to anæsthetize the lining membrane of the air-passages beyond the power of responding to their irritant effect. Hence, reflex action being thus suspended by the local anæsthesia, there is no natural or organic control to the introduction of the vapors, as in the case of vapors which are irrespirable; but, so long as the mechanical act of respiration continues, the manipulator holds the issue of life and death, from this cause, in his hands. This mechanical act of respiration depends for its continuance upon the circulation of aerated blood, and the laws of diffusion of gases and vapors forbid the introduction of these vapors under any ordinary supposable circumstances without some admixture of air. Although possible, it is far less easy to drown patients, by exclusion of air, with these vapors, than with nitrous oxide; and far more easy with ether than with chloroform, because, with the latter agent, death occurs from its asymmetrical toxic effect long before the effects of exclusion of air are reached in most cases. According to Dr. Snow, when air is saturated with ether vapor at eighty degrees Fahrenheit, 100 cubic inches of the mixture consists of twenty-nine cubic inches of air, and seventy-one cubic inches of ether vapor. With chloroform, under the same conditions, the 100 cubic inches of the mixture consists of seventy-four cubic inches of air, and twenty-six cubic inches of chloroform vapor, the terms being nearly reversed. Hence, if death occurred only by exclusion of air, ether would be nearly three times more dangerous than chloroform, and nitrous oxide most dangerous of all. This, however, is only the negative side of the question, and when the positive side is stated, the case stands very differently; for if death occurred only by symmetrical and regularly progressive narcosis, the agent having the greatest power in a given quantity of it

must be the most dangerous to life. Add to this the fact which experience alone could establish, and which experience has now abundantly established, that the more powerful agent, chloroform, occasionally causes death by an irregularity in its action, an asymmetrical narcosis, which it is impossible to foresee or prevent. The application of ether is, therefore, comparatively safe from symmetrical narcosis, and is absolutely safe from the asymmetrical narcosis to which chloroform is liable. Why, then, does it not more rapidly take the place of the more dangerous agent as the general anæsthetic? The answer is, because it appears inconvenient for prejudiced and unthinking people to procure the inhalation of its vapor in a sufficient state of concentration. When properly managed, if not quite as prompt as chloroform, it is as prompt as any anæsthetic can be to be safe, and as prompt as it need be, or should be, in the production of so grave a pathological condition. The whole question, then, turns on its administration in a state of sufficient concentration; while it is proved to be difficult to get it too much concentrated. This essential point of concentration of the vapor has long been recognized by all who are successful in the use of ether, as indicated in the efforts to get close-fitting cones, sponges and mouth-pieces, and the uniform directions to press these firmly over the mouth and nose. The closeness of this application, and the pressure necessary to maintain it with any degree of effective uniformity, are serious obstructions to respiration, at the same time that a foreign vapor is substituted for a portion of the air. This is commonly submitted to by intelligent patients, so long as reason and self-control are not materially impaired. But when the stage of intoxication overpowers reason, and the organic animal instincts are left uncontrolled, the imperious necessity to breathe brings on that struggling and resistance which so interfere with the success of the continuous administration in many cases, because the slightest derangement of the apparatus is so liable to cause an over-dilution of the vapor by the external air.

This inconvenience is so prominent in the use of ether, and causes such an enormous waste of the anæsthetic, that the writer has long looked for some simple device which, by interfering less with the mechanical act of respiration and confining the vapor better, might prove useful in less intelligent or inexpert hands. To effect the objects in view, the bag so long in successful use, with nitrous oxide, supplied the essential idea, and it was only necessary to render this pervious to air to a limited extent, and adapt it to the use of a liquid and its vapor, instead of a gas.

Now, it must never be forgotten that the simple cone of towels supplies all that is needed in the hands of Dr. Leute and many others; and that for a still larger class of manipulators Dr. Lente's admirable inhaler will leave nothing to be desired, for it is extremely doubtful whether failure is possible with any moderately intelligent use of this instrument. And further, it must never be forgotten that success or failure belongs far less to any special mechanical means, than to the knowledge and skill with which these are applied. The value of a billiard cue to effect its object depends so much upon the experience and skill of the hand and eye that use it, that without the skill it is but a stick in the wrong place. The inventor of an admirable mechanical contrivance (Mr. R. Dudgeon, the inventor of the hydraulic jack), was beset for directions how to apply the machine. After spending much time and labor in specific replies, his experience taught him that this was, in a large proportion of cases, wasted. So he abbreviated this labor, and told his correspondents that, although he might sell them the very finest fiddle and bow, the sending them the very best instruction book in the world would not supply the place of brains in learning how to play the fiddle.

It may be safely said that apparatus never succeeds in anything. All it can do is to supplement the amount of intelligence with which it is applied; while in apparatus generally ingenuity often conceals a want of practical utility.

The simple apparatus for administering ether vapor, now to be alluded to, was first made and used by the writer about a year and a half ago, and it has been distributed to various persons for trial since that time. In a few hands it has been moderately successful, and is retained in use with supposed advantage. In others it was successful at first, as a novelty, but was soon discarded for the older sponge or cone of towels. In others it was used with partial success, but needed improvements which could only be made at the expense of simplicity and cheapness. In others it was entirely unsuccessful; while some have not reported their results, and it is fair to consider such as being unfavorable. In Bellevue Hospital, where, for many years, ether has been exclusively and largely used, although it was explained and applied there by the writer, it utterly failed in gaining any favor at all, and was soon laid aside in favor of the simple cone of towels, with which, and commercial ether, the best results seem to be obtained. In another hospital it had better success, and is in practical use.

The average drift of all this testimony makes it somewhat doubtful

whether it is worth describing, but one point induces the writer to give it the benefit of the doubt, and that is the almost unanimous testimony to its economy in the use of ether in proportion to the effect obtained. This, in connection with the admitted fact that it will accomplish the object, will justify any one who is at all dissatisfied with other modes of administration in giving it a fair trial. Half a dozen of them are herewith offered for trial to any who will accept them, and from these they may be home-made almost without expense. The surgical instrument makers will, of course, soon furnish them at a trifling cost should they be demanded.

As shown in the adjoining sketch, the apparatus consists of an hour glass-shaped muslin bag, Fig. 1, which, when laid flat, is about twenty inches long by nine inches wide at the widest part, one end of which is cut off so as to be funnel-shaped, and open to receive the lower part of the face. This funnel-shaped mouth of the bag is of such a size as to admit the nose, mouth, chin and beard of an adult male, and may be adapted to any smaller face by turning it back like a cuff, as in Fig. 4. The muslin of this end of the bag is double to afford additional obstruction here to the passage of air and ether vapor. The narrow part of the bag is made elongated, so as to receive a tin tube (Fig. 2), about seven inches long and two inches in diameter. And the bottom of the bag or round end is made of such a size that, when moderately distended, it holds say forty or fifty cubic inches, or more than is necessary for a full inspiration. When about to be used, this bag is thoroughly wetted in water, and squeezed so that it does not drip, for the purpose of rendering it only partially pervious to air and ether vapor. It is not certain that an impervious bag would not answer as well, but it would be more difficult to obtain, more expensive, less cleanly, and, perhaps, less safe. The sole object of the tin tube is to keep the narrow portion of the bag distended while in use. A piece of flannel about six and a half inches wide and eighteen inches long, and a piece of thick blotting-paper or blotting-card of the same size as the flannel, completes the apparatus. The flannel is laid upon the blotting-board, and the two are rolled up together (Fig. 3) into a roll or spiral which will slip into the tin tube, and when there spring out sufficiently to retain its place loosely. A two-ounce graduated measure, and a can or bottle of ether, are all that are now required for the anæsthesia.

The patient to be anæsthetized being fasting, takes, about fifteen minutes before the time set for operation, a fluid ounce or a fluid ounce and a half of brandy or whiskey, if an adult male, or two fluid ounces

of wine if a female. This, upon an empty stomach, will produce slight intoxication in about ten minutes, and the anæsthetic has only to supplement this in order to get quickly through the stage of excitement in many cases. It also renders retching less likely to occur. The patient is then placed quietly on the table, and is advised in a slow, quiet tone, to be composed and perfectly still. He is told that he will soon begin to feel intoxicated, or excited and restless; that

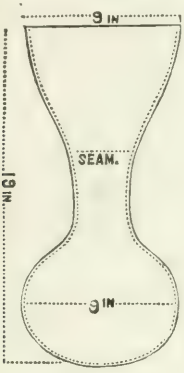


Fig. 1.

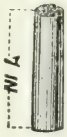


Fig. 2.

Fig. 3.

Fig. 4.

Bag for Ether Anæsthesia.

Fig. 1. Size and shape of thick muslin, two pieces of which stitched together by "pudding-bag seam" all round, excepting the straight top or mouth of the bag, the muslin of each piece being double at the upper part (*a*).

Fig. 2. Tin tube two inches in diameter by seven inches long, the edge of the tin being turned in instead of out at the ends, so as to offer an obstruction to the falling out of the roll after it is slipped into place.

Fig. 3. A piece of flannel laid on a piece of stiff blotting-paper or blotting-board, each about six and a half inches wide by eighteen inches long, and the two rolled up together so as to slip easily into the tin tube.

Fig. 4. The bag in readiness for application to a child. That is, with the upper double part turned back like a cuff, so as to allow the chin, nose, and mouth, to occupy a narrower portion of the bag. The tin tube is slipped further through, into the round part of the bag.

this is very much under his control, and that the more he resists it the sooner he will be asleep. If this advice be given with tact and skill, it will be well received, and be of service in a majority of cases. The manipulator is then to wet the bag thoroughly, squeeze out the water till it no longer drips, slip the empty tin tube into its place in the narrow part of the wet bag, and then prepare the charge of ether. This may be done in several ways; but perhaps the best way is to pour the measured quantity of ether into a tumbler, and, having allowed the roll of flannel and blotting-board to expand itself to nearly the size for the tin tube, dip first one end and then the other into the ether until the ether is all taken up, and then at once slip the charged roll into its place in the tin tube, the latter being already in its place in the wet bag. Then fold, first one end of the wet bag and then the other, up over the part which holds the tin tube so that both ends of the tin tube may be closed up by the wet muslin to prevent loss of ether, and then lay it aside ready for use at any moment. The loss of ether, while thus lying ready, is very small, not over a fluid drachm in half an hour. The quantity of ether for the first charge should vary with the estimated sensibility of the patient. For an adult man one and a half to two fluid ounces, and for females and sensitive males one to one and a half fluid ounce is sufficient, if the ether be good; for children a half to one fluid ounce. In the anæsthesia of children, and in many exceptional cases, no general rule can be laid down; and, indeed, the circumstances of each case must always modify each application; and yet the following directions may be found more or less applicable, and therefore useful in a large number of instances:

About ten minutes before the time for operation, the bag being thus in readiness the can or bottle containing the supply of ether is held to the patient's nostrils, and he is asked to smell it strongly at each inspiration for the purpose of getting used to it. This taking the vapor from the can or bottle is continued for one minute or more, according to circumstances, during which time the advice in regard to self-restraint is firmly repeated. This step establishes tolerance or partial anæsthesia of the mucous membrane of the air-passages, and thus avoids some of the coughing and strangling that are liable to occur from the sudden application of concentrated vapor; but it often brings on hysterical symptoms or delirious restlessness pretty promptly; and whenever this occurs the bag is to be at once applied. If the ether be in a tin can, which is always the best and safest containing vessel for it, and this be only about one-third or half full, the warmth of the hand causes a good supply of vapor, and the

early stages are rapidly brought on. At most, but a minute or a minute and a half is occupied by this step, and the manipulator has still about eight minutes to the time set for operation. The bag is then unfolded, laid on the patient's chest, and the open end drawn over the mouth and nose. The redundant size is taken up in a plait by the side of the nose, and folded down so that the wet muslin is closely applied to the skin of the face, and pressed down into the fossæ on each side of the nose. The part which is least likely to lie close, and which therefore requires most attention, is that under the chin. The most convenient place for the manipulator is at the head of the table, whence he can best apply a hand to either side of the patient's face, and thus support the bag in position without much pressure. The thumbs then naturally fall into the fossæ on each side of the nose, while the fingers support the part under the chin, care being taken not to press upon the larynx. If the patient has a beard, it should be wetted to render it less pervious to air, and the bag drawn tightly around it. If the muslin be well wetted, it sticks pretty closely to the skin, where it gets contact, and the beard offers the chief difficulty. It not unfrequently happens that, after a few inspirations of the concentrated vapor, respiration is suspended. When this occurs the bag is removed till it is resumed, the mouth of the bag being simply turned back on to the bag to save waste of ether. As soon as respiration is reëstablished the mouth of the bag is replaced around the nose and mouth. When restless excitement occurs, the mouth of the bag is supported in place by the two hands of the manipulator, but without much force, and with as little resistance to the motions of the patient, as possible, and with no obstruction over the mouth or nose, and the bag, under no circumstances, is to be allowed to become loose or drop off during the excited movements. The next accident likely to occur is retching, a certain degree of which may occur without the necessity of disturbing the bag; but, when actual vomiting is imminent, the bag must be momentarily removed. The patient then usually lies quiet, and soon passes into the third or required stage of narcosis, and this often with a shudder, or slight general convulsion. The pulse, respiration, and color of the surface, being watched throughout, the eye or the roots of the nails are from time to time tried, to ascertain the condition as to insensibility, and as soon as this is fairly established the operation is begun. In a large proportion of cases not more than four of the eight minutes will have been consumed; and where neither arrest of respiration nor retching occurs not more than two or three minutes' appplication of the bag

will be required. When the operation is fairly under way and no sensibility shown, the bag is removed to avoid the fourth, or snoring stage of narcosis, and is only replaced when some very slight sign of sensibility is seen. In a considerable proportion of operations the first charge of ether, if liberal and well managed, is sufficient; for anæsthesia by ether is quite persistent, and easily kept up, or reënforced. If the operation be long, advantage may be taken of one or more of the intervals when the bag is withdrawn, to examine the roll in the tin tube, and judge by the odor whether the supply of ether be nearly exhausted. If the odor of ether be rather feeble, two or three fluid drachms more is poured on to the roll from the measure, without removing the roll from the tube or the tube from the bag, and the mouth of the bag is turned over to prevent waste until it is needed again. A patient may even wince under the knife before it is reapplied, and yet, if there be a fresh supply of ether ready in the bag, a few inspirations will restore him to the desired third stage again. One or two minutes before the operation is complete, the bag may generally be removed entirely and finally. These precautions do much to prevent that supersaturation with ether which tends to the more certain occurrence of prolonged nausea and vomiting which so often introduce septicæmia, and thus cause death. The reaction always bears an important relation to the primary action, and, if this latter be moderate and well managed, the reaction is likely also to be moderate. The longest time during which the writer has kept up anæsthesia by this bag was about sixty-five minutes for a difficult ovariotomy, and in this the total consumption of ether was less than five fluid ounces, and the recovery both from the anæsthesia and the operation was good.

If there be a prominent advantage in this apparatus, as the writer believes there is, it is in the entire freedom of the respiratory process. The lower end of the bag rises and falls with the respiration without offering any practical obstruction to the mechanical process. And those who will persevere with it until educated to its use will probably discover other advantages hardly less important.

In concluding the consideration of ether, it may be safely said that those who resort to it after a long use of chloroform, and acquire the little skill necessary to use it well, will have a sense of safety and satisfaction which they never knew before.

Chloroform is the most rapid, the most certain, and the most effective anæsthetic which has been practically applied on a large scale up to the present time. When to these prominent advantages are added

the facility and simplicity of its administration, the small quantity required, the facility of getting it of good quality, its non-inflammability, its cheapness, its agreeable odor, and the prejudice in its favor to which all these circumstances will always tend, the key to its popular use is found.

The more prominent of these advantages, however, belong to its excess of power, and this excess of power involves the power to do harm. Therefore, there is another side to the account of chloroform which a long and extensive experience has accumulated against it.

In common use, though perhaps never in expert or skillful use, it occasionally causes death by progressive symmetrical narcosis. But, as this result may be admitted to be within the control of skill and knowledge to prevent it, it is not the most serious disadvantage of chloroform, and the risks it involves might be fairly accepted as being overbalanced by its advantages. But, unfortunately, chloroform occasionally causes death by an asymmetrical narcosis which is beyond human skill and knowledge to foresee or prevent. The sudden and overwhelming narcosis or paralysis of the heart, commonly called cardiac syncope, whether occurring from direct or reflex action of the anæsthetic, is fatal in a large proportion of the cases in which it occurs, and it occurs with chloroform alone. It is not a question of submitting to these rare accidents or dispensing with anæsthesia altogether; nor as to whether they occur from chloroform or from its impurities, or from want of care in its administration, nor is it a question as to whether they occur once in 525 administrations or once in 40,000 administrations. But the simple fact that they occur at all with this anæsthetic, while they do not occur in the use of other anæsthetics which are in practical successful use, and always easily attainable, ought to be sufficient to limit the use of chloroform to the comparatively few cases to which other agents are not applicable.

The fatal accidents from chloroform appear to increase in proportion to the number of administrations very rapidly as it becomes more generally used.

In the *Westminster Review*, for January, 1859, when chloroform had been in use more than ten years, Dr. John Chapman makes a rough though reasonable and useful computation of the proportion of deaths to administrations, and his results are one death in every 16,000 administrations. Dr. Sansom states that in the obstetric practice of London it was estimated to have been used 40,000 times without an accident. Dr. Sansom, in 1866, also states that in the French eastern campaign it was administered 30,000 times or more

without an accident; and in the English eastern campaign there were but two deaths in an unknown but very large number of administrations. In 1865 Dr. Anstec, of London, had administered chloroform more than 3,000 times without an accident. And about this time Dr. Richardson makes a *résumé* from the records of eight large British hospitals, and reports one death in 17,000 administrations. Now, however, this same well-informed author, in a paper "On General Anæsthesia and Anæsthetics," presented to the British Medical Association, in August, 1870, states the general proportion of deaths to administrations as being one in 2,500, or nearly five times greater within six years. And the chairman of the association, Dr. J. Hughes Bennett, in his remarks upon the paper, thinks the proportion of deaths is greater than this. The causes of this rapid increase can only be surmised. As some recent reports of London hospitals—notably that of Mr. C. Bader, of Guy's Hospital, 3,224 administrations and no death, do not show a very much increased mortality, it is fair to infer that the largest share of the increase must fall with the greater force upon the widely-extended general popular use, where want of care and skill, and bad chloroform, may both be involved as important elements. As bearing upon this point, the writer may cite from a private letter from Dr. J. S. Wellford, of Richmond, Virginia, that, in 22,000 administrations of good English chloroform during the late war, no accident occurred. But, subsequently, the same surgeons were supplied with chloroform from methylated spirit, and during its use had some deaths, although the same care and skill were used.

In this country no general statistics worthy of the name have been or can be obtained, but the deaths which occur are generally reported when in the hands of the regular profession, and generally get into the newspapers or journals through coroners' investigations, or through the keenness of reporters, when they occur in other hands. From this single element each writer has to make his own estimates. Under these circumstances this writer judges that it may be useful to present his estimates and their data, particularly as they are made up from sources not accessible to others. It must, however, be remembered that they are but rough estimates, and each reader must apply his own valuation to the data from which they are made up.

No chloroform has been imported into this country, or exported from it, within several years past, and there are but about four original sources of supply, of which the establishment of the writer is the smallest. Upon consultation with the three other sources of supply, it is found that the total quantity of chloroform sold for consumption

in the United States, during 1870, cannot be less than 80,000 pounds, though it may be somewhat more. This, and the total number of reported deaths, is all that can be had with any degree of practically useful accuracy. What follows, then, is simple speculation or rough estimate, though probably safe in the interest of human life.

It may be estimated that not over one-third of this 80,000 pounds, or say 26,000 pounds, is used for anæsthetic purposes by inhalation. Next, it may be estimated that two avoirdupois ounces, or one and a half fluid ounce is used and wasted for each administration, and this would give $26{,}000 \times 8 = 208{,}000$, or say 200,000 administrations, as a very extravagantly safe estimate for the whole country during 1870.

By a pretty thorough search through the principal medical journals for 1870, only fifteen deaths can be found reported as having occurred in this country, two of which are equivocal, and one, though probably reported twice, is counted twice. Add to these one death which occurred late in the year, and but just now reported; and one death reported to the writer on hearsay, and which may or may not be among the published cases. This would make a total of seventeen deaths, or one death in 11,764 administrations. But there are undoubtedly a number of deaths from chloroform which escape even the keenness of newspaper reporters, and the number of such is variously estimated. Some estimate that not more than three-fourths of the deaths are published, while others estimate that not more than one-half are ever publicly known. The writer believes the first estimate to be nearest the truth, but adopts the last for safety. This gives thirty-four deaths, or one death in 5,882 administrations. If any reader judges this estimate to be still not sufficiently liberal, he may double the number of deaths once more, and he will then have one death in 2,900 administrations, and thus get the mortality up to somewhat near that of Dr. Richardson, for Great Britain. But the writer cannot admit the probability of any such mortality for this country, though he knows of no good reason why it should be so much lower here.

Here, then, is the grave and important probability that each surgeon, in offering to his patient the anæsthetic advantages of chloroform, offers him in this country one chance in 5,000 of sudden death, when he might give him all the benefits of anæsthesia by other agents without the risk.

The writer has neither read of nor heard of a single instance of death or grave symptoms from the use of chloroform when used in obstetrical practice for mitigating the pains of labor, nor of any death

from its use in controlling puerperal convulsions; but knows of one death where it was given preparatory to the operation of turning in a case where a midwife had mismanaged and protracted a shoulder-presentation. In obstetrical practice it is comparatively rarely given to anæsthesia, but only to intoxication, and this often in the judicious, safe way of smelling the vapor from a bottle held in the hand of the attendant or nurse. And in a large proportion of cases it is only given during the expulsive pains and after dilatation, in small quantities frequently repeated and largely diluted, and given by careful hands. Prolonged experience, however, seems to indicate that some unknown condition in the parturient female renders chloroform less dangerous in obstetrical practice than in general anæsthesia, while its promptness of action renders it peculiarly applicable to the suddenness of these pains. It is also the only agent that can be effectively used in puerperal eclampsia, and in this affection has doubtless saved many valuable lives. In the comparatively small number of cases which are insusceptible to ether it is also applicable, since in all such the want of susceptibility to the less powerful agent would rationally render the more powerful agent safe.

In regard to these tolerant cases, it is very remarkable how much chloroform they may use with impunity. The greatest consumption the writer has ever met with was in a patient of Dr. Gustave Morrelli, of New York city. This patient was the widow of an Italian physician; her age was forty-eight, and her appearance healthy. She was subject to hereditary migratory gout, the sudden pain of which was so severe that she finally gave up all slower means of temporary alleviation for the prompt action of chloroform, and used it habitually for two years or more prior to her return to Europe. Between the 31st of March and the 16th of December, 1865, a record was kept, and during this time, by Dr. Morrelli's direction, she was supplied by the writer with fifty-three pounds of purified chloroform. And Dr. Morrelli stated to the writer that, during her acute attacks, she not unfrequently used two pounds each day, and used it as economically as she could after her long practice.

The writer cannot close a paper on anæsthetics without again referring to his often published statements, and his long use of the remarkable local and superficial anæsthetic effects of the phenols, or the so-called carbolic acid. The best of these is cresol or cresylic acid, and next phenol or the crystallized carbolic acid. But practically the cheap mixture of the two, called coal-tar creasote or impure carbolic acid, is as good as either. The prompt and complete effect of very dilute

aqueous solutions of this creasote upon the pain of burns, erysipelas, etc., led the writer to infer peculiar anæsthetic properties many years ago, and the numbness or insensibility produced upon the hands by handling it confirmed the idea. The same effect, in lesser degree, is produced by many of the aromatic oils and turpentines, and it is highly probable that most of the liniments and embrocations which have survived the attacks of what is miscalled "rational medicine," owe their continued popular and empirical use to a real local anæsthetic effect produced by this class of substances. The Chinese have long known and used the anæsthetic effects of the essential oils of the mint family of plants, and particularly oil of peppermint, so that it is plain that these old-fashioned local applications for the relief of pain rather deserve more accurate observation and research than the contempt into which they are falling through the fashionable expectantism of the day. The writer can now, in conclusion, only beg the attention of his readers to two important papers recently published on this subject. One by Prof. Erasmus Wilson, of London on "The Anæsthetic Properties of Carbolic Acid," in the London *Journal of Cutaneous Medicine*, an abstract of which may be found in the *Half-Yearly Abstract of the Medical Sciences*, for January 1871, at page 93. The other is a paper published in the *American Journal of Medical Sciences*, for October, 1870, page 573, on "The Application of Carbolic Acid as a Local Anæsthetic in Surgical Operations," by J. H. Bill, M. D., Surgeon U. S. Army. By this paper Dr. Bill is the first to propose and apply this anæsthetic to surgical operations.

ARTICLE XII.

On the Detection of Pulmonary Elastic Tissue in the Sputum of Phthisis. By Jos. G. RICHARDSON, M. D., Microscopist to the Pennsylvania Hospital.

Few practitioners of medicine, even among the *élite* of the profession gathered here to-day, cannot recall instances where some inconsistency between the physical signs, general symptoms, previous history, and hereditary tendencies of a patient, has not rendered the diagnosis of phthisis in its primary stages, for a time, doubtful; and thus caused a procrastination, until too late perhaps, of that change of occupation, or of climate, in default of which the wisest therapeutic measures are sometimes, unfortunately, without avail. This temporary incertitude, occasionally so injurious to the patient; as well as detrimental to our honored science, through loss of confidence in his physician, is at times so universally felt, and when experienced, gives rise to such intense anxiety in the mind of the practitioner, that I am confident a large majority of those present, will feel interested in any method that can render more positive, the early diagnosis of phthisis, and I therefore venture, stranger as I am, to submit for your examination a specimen of lung tissue from sputum, and to lay before you a few remarks upon its recognition.

It is now more than twenty years, since efforts were first made, to render the microscopist's skill, useful in the detection of consumption, and the labors of such experienced observers as Bennett of Edinburgh, with Queckett and Beale of London, soon demonstrated the fact that elastic tissue does occur in the sputum of phthisis, at an early stage of the disease; but so tedious and troublesome was the investigation, that it was seldom attempted as an assistance to diagnosis, until Dr. Fenwick, physician to the London hospital, conceived the happy idea of liquifying the expectoration, by boiling it with caustic soda, thus dissolving nearly all its normal ingredients, and leaving, almost by itself, the elastic tissue, which when thrown into water is deposited at the bottom of the vessel, and can readily be removed by means of a glass dipping tube for examination.

Dr. Fenwick's method of procedure, doubtless familiar to many, perhaps to most of you, is essentially as follows: About an ounce of the suspected sputum, preferably that which has been ejected in the morning before breakfast, is to be placed in a porcelain evaporating

dish of four fluid ounces capacity, an ounce of the solution of caustic soda (℥ v to the Oj of rain water) poured over it, and the mixture boiled for five minutes, adding a little more of the caustic solution and reboiling for a short time, should any tenacious mucus remain undissolved. When its contents are completely liquified, the capsule is to be emptied into half a pint of cool water, contained in a conical vessel, the fluid stirred round briskly, and then allowed to repose for half an hour or so, when the elastic fibre will be found at the bottom of the glass.

In order to investigate this under the microscope, a small quantity of the muddy deposit is to be removed from the lower portions of the vessel, with a glass tube, in the ordinary way, a single drop placed in the middle of a microscope slide, covered with thin glass and inspected with a magnifying power of about 200 diameters. Thus examined as you will see from the mounted specimens in the class microscope, which I propose to pass around the room, the portion of pulmonary tissue present the appearance of being composed of shining white fibres, each about the diameter of a horse hair, which are sometimes curled at their extremities. When large, these fragments, like the one I show you, exhibit the outline of two, three or more air vesicles, about $\frac{1}{100}$ of an inch in diameter, or, if smaller, their fibres are often arranged in the shape of a capital Y, with two or three filaments, stretched across from the extremity of one arm of the letter to the other, the frequency of this form being, I presume, due to the fact, that the meeting point of the walls belonging to three air vesicles, on account of its being thickest and firmest, resists disintegration longer than any other portion.

The object of my present paper being more particularly to aid in the *diagnosis* of this elastic tissue, from any of the usual or extraordinary ingredients of boiled or alkalized sputum, I shall take up and describe, *seriatim*, the various substances which are liable to mislead the novice in this examination; asking indulgence of the experienced microscopists who hear me (for what may, I fear, seem to them tedious prolixity of detail), on the ground that if, by this minute description, I enable each of ten physicians among my present audience to diagnose a single obscure case of phthisis in the course of the next year, by this method, our time will assuredly not be spent in vain.

I shall commence by quoting a paragraph, which I have elsewhere published, in regard to an important peculiarity of the pulmonary structure itself, as follows: "After much careful investigation of various specimens of sputum, from both hospital patients and cases in

private practice, for the purpose of detecting some characteristics of the lung tissue, by which it could be promptly and certainly recognized, it occurred to me that the fibers of the air vesicles, being elastic, must break, like a thread of india rubber, with a square transverse fracture, while the filaments of any inelastic material, whether vegetable or animal, would *fray out*, as it were, and present to the eye a more or less obscurely pointed appearance. Further observation proved my hypothesis to be correct in numerous instances; and I believe that this characteristic of abruptly broken fibres will be found one of the most useful means yet suggested for the recognition of pulmonary issue in sputum."

Some of the most common ingredients of expectoration, which may be mistaken for elastic tissue, are cotton or linen fibres, derived from sheets, pillow-cases, etc. These, when shaken, give off minute particles of their structure that are inhaled as dust and expectorated again in the sputa; such microscopical fragments often split up at one end, and assume the Y shape mentioned by some authorities as characteristic of pulmonary tissue, but they very rarely present the appearance of a third fibre crossing from one extremity to the other of the arms of the Y.

Another difference between the two substances is, that individual fibres of the elastic tissue in general may be perfectly distinguished, even when bound together with the membrane from the wall of the air vesicle, whilst an unsplit flax filament rarely shows distinct component fibrillæ. The characteristic of abruptly broken fibres already referred to is especially valuable in diagnosing true elastic tissue from filaments of cotton or flax.

A second usual constituent of the sputa, liable to be mistaken for lung structure, is the starch corpuscle from bread, potatoes, etc., whose transparent cell wall, after boiling, presents no indistinct analogy to the pulmonary air vesicle, which it approaches in magnitude, whilst the delicate branching folds into which it is commonly thrown may readily be taken for fibres, which they resemble in size; these folds, however, are generally too pale and too few in number to counterfeit elastic tissue from the lungs, and close scrutiny, with careful management of the light, will almost always reveal the oval membranous sack of which they form a part. In cases of doubt, this may be brought into view by coloration with tincture of iodine or aniline solution.

Substances of vegetable origin, such as fragments from various fruits, seeds, leaves, and other articles of food, from tobacco used for

chewing, etc., often exhibit a network of branching fibres, presenting the general aspect of elastic tissue; but the cells of such structures, when of smaller size than the pulmonary air vesicles (that is, less than one hundredth of an inch in diameter), are generally composed of single filaments, and, when larger, with thicker walls, rarely present the appearance of two or three parallel fibers united by a delicate membrane, so common in the lung tissue. Here, too, the characteristic of abruptly broken ends will often enable us to recognize the elastic material.

Some of the multitudinous forms of fungi, which, as they occur in sputum, vary in diameter from the extremely delicate filaments of the leptothrix buccalis, not more than one-third the thickness of elastic fiber, up to the luxuriant types of the yeast plant, whose mycelia often measure four times as much across, may well puzzle the tyro, and render it difficult for him to decide at first whether he has under his eye, a vegetable or animal structure. This resemblance is much intensified by the dichotomous or branching form, which most of the fungi assume, but there is one point of difference, which will be found an almost infallible sign, to wit, that the branching character in elastic tissue generally results from the separation of two or more previously parallel fibres, and that, therefore, the apparent stem, is larger than either of the filaments into which it seems to divide, whilst in the mycelium of a fungus, each branch is often quite as large as the parent trunk.

The one dilemma in which the peculiarity of squarely broken filaments, fails to aid us, is met with when we are obliged to distinguish elastic tissue of the lungs from the same elementary structure, as it occurs in the flesh of animals used for food, fragments of which are of course frequently introduced into the saliva during the process of mastication and are then liable to be ejected with the sputa. In such cases, however, an entire absence of the cellular arrangement, in which the pulmonary tissue (reminding one of the skeleton leaves formerly fashionable as parlor ornaments) suggests the shadowy outline of the air vesicles, from whence it is derived, will almost always enable us to attain absolute certainty in our decision.

As an evidence of the real practical value of this means of diagnosis, allow me, in conclusion, briefly to recount the history of a case of acute tuberculosis, which occurred last year, in the Pennsylvania hospital, when we succeeded in determining the nature of the malady in a patient, who, as often happens, was at first supposed by some who saw him to be laboring under typhoid fever. The report is pub-

lished by Dr. James H. Hutchinson, attending physician to the hospital (under whose care it was admitted), in the January number of the *American Journal of the Medical Sciences*, as follows:

Summary of the Proceedings of the Pathological Society of Philadelphia. June 9th, 1870. Phthisis diagnosticated by aid of the Microscopic Examination of the Sputa.

Dr. Hutchinson exhibited the specimens, and said they were taken from the body of a young man, aged nineteen years, who was admitted into the Pennsylvania Hospital, February 17th, 1870. The lad was a sailor, said to have been suffering for four weeks with his present illness, which had begun as an ordinary cold, but was now thought to be fever. On admission, there was marked mental hebetude, decided heat of skin, increased frequency of pulse and of respiration, and occasional cough with scanty expectoration, but no diarrhœa, no tympany, no rose-colored spots or other eruption, no epitaxis, and only a slight coating of the tongue.

Careful physical examinations, made at various times and by different physicians, did not lead to the detection of tuberculous disease of the lungs, although this was suspected. Thermometric observations, made daily for five weeks, showed that the temperature of the body was abnormally high, as it was never found to be below 101°, and was frequently 104°. On a few consecutive days the thermometer would indicate the latter temperature, but this was by no means the rule, and there was at no time anything like a gradual rise or fall of the temperature noted.

Failing to detect, by means of physical examination, disease of the lungs, to which this long continued elevation of the temperature, as well as some of the general symptoms pointed, I requested Dr. J. G. Richardson, Microscopist to the hospital, to examine the sputa of the patient after they had been treated as recommended by Fenwick, by adding a solution of caustic soda and boiling, and, on the 14th of March, I received a reply to the effect that the scanty expectoration contained a very large quantity of yellow elastic tissue. A week later, dullness on percussion and some harshness of the respiratory murmur was detected in the left superior scapular region, and those sounds soon gave place, not merely in this region, but in others, to those of softening.

The thermometric observations, taken from time to time, always indicated an elevation of temperature. In April, there were symp-

toms of tubercular meningitis, but these afterwards disappeared, and did not again recur. On the 8th of April, the patient complained of intense pain in his abdomen, which was somewhat increased by pressure. This pain caused the patient to draw up his lower extremities and to bend forward his body so as to relax the abdominal walls, a position which suggested peritonitis, but there was no other evidence of its existence.. The pain continued until the time of his death, but was always moderated by the administration of opium.

Death took place June 4th. The autopsy was made the next day, thirty hours after death. There was a good deal of serous effusion beneath the membranes and in the ventricles of the brain, but no evidence of tubercular or other inflammation of the membranes or of the brain itself. The bronchial glands were enormously enlarged. At the apices of both lungs were numerous small excavations; the remainder of both lungs was studded with tubercles. The mesenteric glands were also much enlarged, and the intestines were the seat of tuberculous ulceration.

ARTICLE XIII.

On one of the Modes of Death from Chloroform. By ANDREW H. SMITH, M. D., of New York.

Mr. President and Gentlemen of the Society:

Without taking the time of the Society in reviewing the opinions which have been put forward, and which are generally accepted in reference to the manner in which chloroform produces death, and which, no doubt, are familiar to all present, I desire to present my own views as to one of the modes by which this result takes place.

In a certain proportion of cases I believe death is occasioned by the direct local anæsthetic action of the chloroform upon the lungs. It is well known that the respiratory movements are reflex in their character, and are excited chiefly by the irritation of the terminal filaments of the pulmonary nerves, which result from the presence of carbonic acid in the lungs. The character of this irritation may be appreciated at any time by simply holding the breath. Now, it is well known that the senses of taste and smell are abolished at a very early stage of chloroform narcosis, and this effect is universally attributed to the *local* action of the chloroform. In his able paper, read before the Society yesterday, Dr. Squibb spoke of the local anæsthesia of the larynx resulting from the direct contact of the anæsthetic vapor as explaining the fact that the glottis does not close to prevent the passage of such vapors, as is the case when other irritating substances are inhaled. Precisely this effect extended to a large portion of the pulmonary surface, acts, as I conceive, to so far blunt the sensibility of the pulmonary nerves as to abolish the sense of the necessity for respiration, the *besoin de respirer*. The patient ceases to breathe because he no longer feels that peculiar distressing sensation which can be relieved only by breathing.

Exactly the same result is observed in opium narcosis, in which the sensibility of the lungs becomes more and more blunted, requiring and progressively increasing accumulation of carbonic acid to cause the necessary stimulus to the respiratory act. Hence we find the respiration becoming slower and slower until it finally ceases altogether. The only difference is that in the case of opium this result is brought about secondarily through the medium of the circulation, and the lungs simply share in the general anæsthesia, while

with chloroform the effect is *local*, from the direct topical action of the vapor.

Of course, I do not deny that cardiac syncope may occur and prove fatal; but in two cases in which death occurred from chloroform, under my observation, respiration ceased suddenly, before unconsciousness had taken place, while the action of the heart continued for a considerable time. In several instances I have, unintentionally, destroyed animals with chloroform, while practicing vivisections, and in every case the pulsations of the heart continued after respiration had ceased. The numerous instances in which impending death is averted by artificial respiration, also points to the breathing as the function which, in these cases, is first impaired.

It occasionally happens that the anæsthetic effect of opium upon the lungs is developed out of proportion to the narcotic action upon the cerebrum, so that the respiration will become alarmingly slow, while the patient is still sufficiently conscious to quicken his breathing at the command of the physician. A case of this kind was described by Dr. J. C. Smith, before the New York Medical Journal Association, and is published in the *New York Medical Record* for January, 1871. Some five years ago I saw a case in which this result occurred from the use of chloroform. I was giving the chloroform very slowly, the object being merely to allay pain, when suddenly the patient ceased to breathe. Having seen two cases prove fatal, death beginning in the lungs, I was very much alarmed, and was about to begin artificial respiration, when I observed that the eyelids were trembling, and that the general expression of the countenance was not that of unconsciousness. Laying my hand roughly upon her shoulder, I said, in a sharp, quick tone, *breathe*, and, to my inexpressible relief, she responded immediately with a full inspiration. But there seemed to be no disposition to repeat the effort voluntarily, and for several minutes each respiratory act was performed only at my command. It is very possible that in this case the pulmonary anæsthesia was not so performed, but that the accumulation of carbonic acid would have eventually excited the reflex respiratory movements, though I waited several times as long as I dared to, to see if such would not be the result.

I may add that about two years ago I endeavored to determine by experiment what would be the effect of producing within the lungs the peculiar partial anæsthesia which results from the application of tincture of aconite to the surface. With this view I caused an animal to inhale for a moment the tincture of aconite, using Richardson's

nebulizer. The respiration became at once very much embarrassed, and death resulted after a few hours. But I was unable to separate, to my own satisfaction, the local action upon the lungs from the general toxic effect of the drug, the absorption of which into the blood may have been sufficient of itself to produce death.

Death from the local action of chloroform would be most likely to result from a large amount of vapor being inhaled at a single inspiration. This might arise from pouring a quantity of chloroform upon a towel already warmed by the breath of the patient and by contact with the face, and if the towels were formed into the shape of a cone the cone might well be filled with almost undiluted chloroform vapor. When this is suddenly applied to the face of the patient, the first inspiration must include an undue proportion of the anæsthetic. Hence an inhaler like that of Dr. Sayre, in which the chloroform is vaporized by the current of air passing through it, would afford much greater safety.

The greater safety of ether as compared with chloroform is due, I think, in part to the comparatively slight local effect which it is capable of producing. The vapor of ether exerts scarcely any appreciable effect upon the integument, and its anæsthetic action upon mucous surfaces is very feeble. Chloroform vapor, on the other hand, exerts a considerable anæsthetic influence upon the common integument, and this effect is greatly intensified when it is applied to the mucous membranes.

As the danger in using chloroform will be diminished in proportion as we appreciate the various modes by which it tends to produce death, this line of investigation assumes the utmost importance, and I am convinced that among these modes that of pulmonary anæsthesia deserves a prominent recognition.

February 9th, 1871.

ARTICLE XIV.

Absorbtion of Bone. By Isaac N. Mead, M. D., Amenia.

Near the 1st of June, 1869, I was called to see Miss Lillie W., at Millerton, N. Y., from whom the specimen which accompanies this report was taken. I found the right femur fractured at about the junction of the middle and upper third. I had been asked before to prescribe for pain in this same limb, from which she had suffered since April of the same year, when she took a heavy cold while playing in the snow. I never examined the limb until after the fracture; I then found a simple transverse fracture; nothing more; no bruise, abrasion of the skin, or anything of the kind.

Her story was, that she was going down stairs, when on the third stair from the bottom, her leg broke and let her fall. The fracture was reduced very easily; I put her upon a double inclined plane with side splints, where she was kept about thirty-five days, when I took off the side splints and put on a thick starch bandage, leaving the limb upon the double inclined plane, about one week longer; then the bandage being dry, let her sit up, telling the family to give her crutches and let her walk in, about another week, and to take off the starch bandage at the end of the second week. I happened to be in the place near the end of the second week, and took off the bandage myself, and found a very large provisional callous. Soon after, her father took her to Binghamton, N. Y., on a visit to some friends. I did not see her again until her return, about four weeks, when I was sent for (I supposed she was walking and had recovered), but found she had not walked, or even stepped upon that foot; she was very pale and emaciated, and the injured limb, greatly enlarged from the knee to the hip. Dr. Knight, of Sharon, Ct., was called as counsel, knowing the scrofulous taint, which is hereditary with the whole family; we called it scrofulous, and put her on cod liver oil, iron and quinine, and was kept upon this treatment with an occasional slight change, until her death, December 2d, 1869. From the middle of August, when she returned from her visit west, her limb continued to enlarge, until near the middle of October, when it measured twenty-eight inches in circumference, remaining the same until her death. About the first of October, a second physician was called to see the case, and advised opening it, as he thought we should find a

collection of pus there. I was not of the same opinion then; the friends being anxious to have it done, I consented, and introduced a long slim bistoury about four inches when I struck the point against the bone (this was near the junction of the middle and lower third), found nothing but blood, I applied a compress; the wound soon healed. About the 25th of November, a physician from New York city saw her, and tapped the limb with a trocar and canula, in two places: one of these punctures healed kindly in two or three days; from the other, there started a fungus growth, which grew rapidly, and exuded a straw-colored liquid which pustulated and excoriated the skin wherever it came in contact. One remarkable feature of the case is, she suffered very little pain in the limb, from the time it was broken until her death.

After her death, Dr. Knight assisted me in examining the limb, which was the only part of the body we were permitted to cut. After cutting through the skin, we came upon a layer of very pale, but otherwise healthy looking muscle, and going through that, which was about one-eighth of an inch in thickness, we found a disorganized mass of a dark brown color, and of the consistency of a blood clot. This, too, from the hip to the knee-joint, and there stopped abruptly.

The arteries, veins and nerves were uninjured; but the condyles of the femur, which accompany this report, were the only trace of bone to be found between the knee-joint and pelvis. We found a cartilaginous substance near the acetabulum, which resembled a mold of the trochanter major; with this exception, nothing that looked as if it had ever been bone.

ARTICLE XV.

Operation for the Radical Cure of Inguinal Hernia. By C. C. F. GAY, M. D., Surgeon to the Buffalo General Hospital, etc.

The operation I have devised and successfully executed for the radical cure of hernia, was suggested to me by the publication of operations performed by two eminent surgeons of this country, residing remotely the one from the other.

By conjoining the two methods proposed by Dr. Chisolm of Charleston, S. C., and Dr. Armsby of Albany, N. Y., the operation will, I believe, result in every instance in radical cure.

It will be remembered that Dr. Chisolm's operation consists in the subcutaneous use of silver wire introduced through the superior and inferior columns of the abdominal ring, twisting the wire so as to bring the two columns into apposition, and allowing the wire to remain *in situ*.

Dr. Armsby's operation consists in the use of the seton or ligature. I have not learned whether, or not, the results of these two methods have been such as to give full and entire satisfaction.

My first operation was made at the Buffalo General Hospital, on April 29th, 1870; and at the time of writing this paper, February 4th, 1871, there has been no protrusion or tendency to protrusion of intestine. I may conclude, therefore, after this lapse of time, that the cure is radical.

The only instrument used was a strong, slightly curved needle, about four inches in length, with an eye at its point. To the needle was attached a strong handle.

Reducing the hernia, I gathered up, upon the left index finger, a fold of scrotum, and carried this before the finger to the margin of the abdominal ring. The needle was then thrust through the inferior column of the ring, its point carried over the superior column and out through the integuments about one inch above the margin of the superior column; then threading the needle with silver wire, it was drawn back into the scrotum, and, without entirely withdrawing it from the scrotal integument, it was returned over the border of the inferior column beneath and through the margin of the superior column, making the point of exit to correspond with the point of entrance; then removing the needle and twisting the wire, the ring was found sufficiently closed to prevent escape of intestine.

The next step in the operation was to introduce the silk seton.

The seton was composed of six or eight strands of ordinary sized silk thread; when introduced, it extended from the fundus of the scrotum to two inches above the superior column of the ring, and was inserted by the same needle used in introducing the wire ligature. In inserting it, I raised upon the fore-finger the scrotum at its fundus and carried it up to the ring; then just behind the finger, thrust the needle, armed with the seton, through the scrotum, through the superior column of the ring, and out through the integumental covering. Tying the ends of the seton, it was allowed to remain until the tenth day. After removing it, the silver wire was twisted a little more tightly, clipped short, so that the end disappeared from view beneath the integuments.

There was scarcely any constitutional disturbance, but some degree of pain and considerable local inflammation following the operation. Five months thereafter, observing that the wire was about to ulcerate through the integuments and escape, it was cut out, leaving the ring closed. I operated by this conjoint method because I believed the wire ligature alone insufficient to effect a radical cure; that the wire alone would cause no local inflammation, but would act only mechanically to hold the columns of the ring in apposition. Therefore the seton was used in order to excite local inflammation sufficient to agglutinate the parts permanently together.

In a subsequent operation I learned that the position of the patient had somewhat to do with the facility and ease with which the operation is performed. The patient etherized should lie upon his back, and the only other direction as to position that I would give is that the thighs be extended.

ARTICLE XVI.

A case of Ligation of the Left Subclavian Artery for Axillary Aneurism. By C. C. GAY, M. D., Surgeon to the Buffalo General Hospital, etc.

George Saltzman, aged twenty-six years, was admitted to the Buffalo General Hospital on August 26th, 1870, giving the following history of himself. He was wounded six years ago by the accidental discharge of a pistol, the ball entering the front of his left shoulder. A fruitless search was made for the ball, and soon after the accident a small tumor was observable in the axilla. The forearm and arm became partially paralyzed. For the past six months the tumor has rapidly grown until now it has attained the size of a child's head, and is located at or near the subclavicular region. The patient has consulted many surgeons in this and an adjoining State, and he says he has invariably been advised to let the tumor alone. Latterly it had become very troublesome, and he entered the hospital determined to have something done, regardless of consequences. On a thorough examination of the tumor I found all the diagnostic signs of aneurism, save one, and that one the absence of pulsation in the radial artery at the wrist, absent. Accordingly on the next day I caused to be summoned a full board of the members of both the medical and surgical staff of the hospital. At this consultation, after prolonged examination, not one of the several medical gentlemen present was able to pronounce a positive diagnosis. There was no pulsation in the tumor nor an aneurismal thrill. It was hard and movable. Pressing upon its surface did not diminish its size. Recently a space upon its surface, about one inch and a half in diameter, had become soft. It fluctuated and pointed like an abscess about to burst. Through this soft, fluctuating surface, I introduced the exploring needle, and thrust it into the center of the tumor. Afterward introduced a good sized trochar into the center of the tumor; but little blood escaped, and the flow ceased before the trochar was withdrawn.

On making pressure, now, upon the soft fluctuating surface I have described above, the aneurismal sac burst, and it may readily be conceived that the hemorrhage was fearful, but was controlled at once, by thrusting the hand through the rent, getting behind the aneurismal clot and seizing the axillary vessels. This position was maintained until the subclavian could be compressed; then withdrawing

the hand, I assigned this position to two assistants, and proceeded at once to ligate the subclavian artery.

The artery was ligated at the junction of the second and third portion of its course. On the ninth day after the operation secondary hemorrhage supervened, but was controlled by the house physician; the axillary wound was firmly tamponed by sponge wet with sol. persulphas, and the plug allowed to remain for three days, on removal of which, there was found to be entire suppression of hemorrhage. The ligature came away spontaneously on the seventeenth day after the operation. Six weeks from the date of the operation the patient was up and dressed, the wound made for the ligation of the artery having closed up, and the wound of the axilla, caused by the rupture of the sac, having also nearly closed. Partial paralysis of the arm remains, and there is still no pulsation in the radial artery.

One of the chief points of interest that attaches to a record of this case of aneurismal tumor consists in the absence of the aneurismal thrill and pulsation. The patient had been examined several weeks previous to his coming under my observation by those eminent in their profession, and the possibility of aneurism was not suggested. It was doubtless, fortunate for the patient, as spontaneous rupture was certain at no very remote period, that the rupture occurred at the time it did, when assistance could be promptly rendered.

ARTICLE XVII.

Spinal Irritation. By SAMUEL PETERS, M. D., Cohoes.

If we look in our standard text-books of the present day, we find little or nothing in relation to a disease (or if you please, a complication of symptoms) which is certainly, not only quite common, but exceedingly annoying to the comfort of the patient, and too often also to that of the physician. If we ask why the books are so silent in a question of so much importance, we can only imagine the answer to be, that there is no such affection; in other words, that there is no special condition of the spinal cord inducing the symptoms, which are grouped together and called symptoms of spinal irritation. While some of our most patient, careful, acute observers declare their firm belief in the individuality of this disease, others, equally painstaking and accurate, deny its existence, and refer the whole series of symptoms to that protean disease, *hysteria*. The names of those which my limited examination places upon the affirmative side of this discussion are, Teale, Darwell, Tate, Griffin, Marshall, Flint, Sr., and Hammond, and certainly this is a formidable list; whereas, upon the other hand, we find nearly all of those who are acknowledged authority in perhaps most, if not all other matters pertaining to practical medicine, entirely ignoring its existence. The result is, that each observer is left to form his own opinions, and pin his faith accordingly.

Perhaps, in this case, as in many others, the *name* is at fault, which if it could be replaced by one more suggestive and more scientific, the whole force of the profession could be brought to bear upon it, and much good result to the cause of true science. Even allowing that all the phenomena of this disease may be legitimately included within the limits of hysteria, may there not be conjoined and coexistent, the pathological state of the spinal cord pointed out by Hammond, and described as anæmia? I see no reason why such a thing may not be possible, nevertheless, I am not prepared to either assert or deny it, and practically, I see no great necessity for doing so.

Without entering further upon this discussion, we shall not, I apprehend, differ widely upon the following points: 1. That there are certain symptoms which are generally associated, that is, occurring contemporaneously, with marked tenderness over some part or parts of the spinal column, call the name of the affection what you

please; make any hypothesis of its pathology. These symptoms exist in a relation that has so much uniformity that we cannot evade the conclusion that they have a common origin somewhere, and spinal irritation, spinal weakness, spinal tenderness or hysteria, either or neither, may be accepted as the name; still, meet it we must.

2. That the tenderness and pain of the affected part of the spine are sometimes severe and particularly referred to by the sufferer, whereas, in other cases, they are insignificant; even unnoticed and unknown to the patient himself.

3. That the most noticeable symptoms are eccentric in their character, pointing to some peripheral organ or organs, and involving it in more or less pain and functional derangement; thus simulating, it may be either cerebral, laryngeal, pulmonary, cardiac, hepatic, gastric, enteretic or uterine diseases; one or more.

4. That ordinary treatment is often, and we might say, generally tedious and unsatisfactory; the patient continuing for a lengthened period to exhibit a desponding and perhaps even a melancholy spirit, loth to acknowledge any amelioration or improvement under the treatment employed.

Having noted the above as facts founded upon the experience of not only myself, but, as we may well believe, of others, I propose to limit my task to a consideration of some of the remedies commonly made use of in the treatment, and more particularly of faradization. I may be allowed to refer all who are interested in the further study of the history, symptoms and pathology of this disease, to a carefully prepared and most excellent paper by Dr. W. A. Hammond, published in the Journal of Psychological Medicine, for April, 1870. This article would, perhaps, be prolonged to an unreasonable extent, were all these interesting points to be properly considered. I leave them, therefore, with the hope that the statements and allusions herein, in reference to them, will be sufficient to exonerate me from improper omissions.

We will proceed, then, to consider some of the more common remedies in this disease. Leaving out of the question the remedies once so much in vogue in this and most other diseases, viz., venesection and mercurialization which I have not resorted to, deeming them uncalled for in the general nervous prostration and anæmia, which are, in most cases, prominent conditions, I will proceed to examine most briefly, counter-irritants, chalybeates, phosphorus, strychnia, exercise, mental remedies and faradization. I do this especially because, as a whole, my experience differs from the favorable

reports given by many writers, of the value of these remedies (exclusive of the last named, which I have not seen particularly recommended.)

Counter-irritants seem to have had the confidence of nearly all who have written upon this disease, excepting, perhaps, Dr. Flint, Sr., who, as I understand him, rather discourages their too free use. I have tested them thoroughly, as I think, having prescribed them in one or another form in all my cases until I had proved what I am to state. Patients were encouraged to persevere in their use to an almost unlimited extent; and although several have endured the vessicating plaster from fifteen to full thirty minutes, I can say that they have afforded only very slight benefit. After consuming months in their patient use, I could not discover that any decided or permanent advantage had been gained. I therefore resort to them, if at all, more to divert and employ the patient's mind than for any decided help they can otherwise afford. Why it is that my testimony must differ so much from that of nearly all others I cannot say. Such, however, has been my experience, and I must venture to express it distinctly.

Preparations of iron are prescribed by nearly all, and with better results. Even these are tardy in their effect, failing too long to make any decided impression and thus relieve the anxious expectations of all concerned. Dr. Flint, who has been before referred to, expresses the necessity of continuing their use for a lengthened period. Of course they must aid somewhat in removing one of the obstacles to recovery which generally exists, namely anæmia.

Phosphorus will be expected to supply force and tone to the nervous system, and it certainly will do so under favorable circumstances. These favorable circumstances seem to be not always present, for I can assure any one that he will often feel like doubting its efficiency altogether.

Strychnia is a remedy which should be placed in the category of those worthy of hopeful trial; and while we are unwilling to do without it, especially when from long disuse the muscles have become illy adapted to their requirements in locomotion, I must withhold from it in this disease the praise it so richly deserves in others, and, as I believe, more appropriate ones.

We have now to consider exercise a remedy which I am confident is worth more by far than either of those already commented upon, because having failed in them so generally, I have urged by every possible means systematic exercise. It is well known that cases are now and then found of spinal tenderness, in which there is great

indisposition to take even the smallest amount of exercise. In these it has sometimes been found necessary to use the strongest incentives to induce them to undertake even a single step and to add one more for each succeeding day until their confidence in their power to move was re-established. I have never failed to accomplish great good by a determined course of this kind. Those who have not come to such a degree of prostration should be encouraged to spend more and more time in the open air, or to take a pleasant and easy journey. But to be useful the exercise must be systematic, progressive one day but little more than the day previous, and never two or three days' exercise in one. Self-confidence is what the patient should learn; and this leads me to speak of our next agent, mental treatment.

While we may and should strongly sympathize with them in their sufferings, they may be, though half unwillingly, brought by careful persuasion to reassume their manly determinations and their former ambition. Much is certainly to be done in this manner toward the achievement of success. But I must hasten on to the consideration of the remedy which has pleased me most in its effects in these often trying cases, namely, faradization. Much has been said, recently, upon medical electricity, in some late works as well as in the journals; and if we are to judge by the ardency of those who are most skilled in the use of this agent, it must become a valuable adjuvant in the management of a large class of cases.

A succession of cases of the affection under consideration, rapidly and favorably influenced, has gained for it, in my estimation, a degree of confidence which I am quite free to acknowledge. So far as I know, the galvanic current was the only form that was recommended and tried; and not having at the time suitable apparatus for its generation, the uninterrupted current was made use of by way of experiment, and it was soon found capable of affording material aid. Two cases had been previously treated by excellent physicians for some occult uterine disease, so clearly did the subjective symptoms point to this organ. Failing to find good evidence of the existence of such disease, and detecting marked tenderness over some of the lumbar vertebræ, they were subjected to faradization, and relieved to such a degree that the troublesome symptoms were no longer complained of. Another gave her history, as having been for a long time treated for inflammation of the lungs. She had also complained for about two years of a constriction of the throat, so that she could swallow her food only in the smallest portions. After pursuing the ordinary treatment for some time, and failing to bring about much relief, she

was cured with the faradaic current, after about forty-two sittings in all. Other cases might be referred to, but it is unnecessary. My object is accomplished, after I have described the mode in which I have used this remedy. I can do this by simply saying that I have practiced what is denominated by Drs. Beard and Rockwell, of New York city, "general electrization," that is, the negative pole under the feet, the positive applied to all parts of the body, from the shoulders to the hips. The number of applications in individual cases has been from eighteen to forty-seven, each continuing not over ten minutes.

Having lately procured apparatus for generating the galvanic current, I intend to compare the two, and report at some future time.

ARTICLE XVIII.

Insanity, Its Dependence on Physical Disease. By JOHN P. GRAY, M. D., Superintendent of the New York State Lunatic Asylum, Utica.

Since my connection with the asylum, now over twenty years, I have endeavored to direct my attention and study, as far as possible, to the investigation of the causes of insanity, and the observation of the progress of the disease while under treatment. I early observed that in those cases of which full and reliable information could be obtained, the physical cause was generally found; that some change in some part or parts of the organism preceded the earliest manifestations of mental disturbance; that in those cases, some diseased condition of the body, outside of the brain, generally preceded the cerebral symptoms and the consequent insanity. In my official report for 1863, I presented this subject, with the intention of showing, from the recorded cases in this institution the relation, numerically, where moral and physical causes had been attributed as the influence determining the insanity. I there presented a tabulated statement embracing the assigned causation, in all cases admitted up to that date, with comments, assigning as moral causes those acting through the emotions, sentiments, passions, and affections; as physical, those producing their effects through physical impairment, diseases or injuries. In 1843, Dr. Brigham says, "with Pinel, Esquirol, and Georget, we believe that moral causes are far more operative than physical." In his first report he assigns moral causes in 128 cases; physical causes in ninety-three cases; unknown and doubtful in fifty-five cases. Of the moral causes fifty are attributed to religious anxiety. I then expressed my conviction that more careful observation would reveal physical causes as productive of more insanity than moral causes, and that religious excitement and anxiety had but slight influence in this direction. The annexed table embraces the analysis of causation, moral and physical, in all cases admitted up to this date.

I then expressed the following views on this subject:

"Here we have a gradual and marked decrease in moral, and increase in physical causes. This is neither accident nor design. It results from experience and recorded facts. Insanity, for many centuries, was not recognized as a disease; but as a moral state, and in some a spiritual or demoniacal possession, and influenced by the moon.

Many of the older medical authorities refer to and describe demonomania as a form of mental disease. The disenthrallment of the professional, as well as the public mind, on this subject, has been slow and gradual. However, we have similar ignorance and superstition in other fields of medical research.

"The question of the causation of insanity, is one of the most important with which we have to deal. If insanity is immediately developed from religious anxiety, excessive application to study, or giving way to the emotions of grief or joy, from the intoxication of success or from disappointed ambition, society must be guarded and admonished in those directions, and the treatment of persons insane from these causes must be such as to meet successfully the ever present causative influence. If, however, those apparently suffering from profound religious depression, or from the other moral causes named, are ascertained to be so affected because of certain bodily conditions, the successful means of treatment will be very different. If we find that insanity is dependent on causes which tend to depress the vital forces, and we discover these causes, we approach the question of the control of the disease and its limitation. If we find these causes, instead of subtle, moral influences, mainly physical, we advance still further toward control and limitation, as the latter are more within the power of individuals and of the profession, than the former. Think of having, within a single year, fifty persons whom you believe to be insane from religious anxiety, and those from all Christian denominations. What a store of theological knowledge the physician must possess, and what subtlety of reasoning to meet all these cases. This number was attributed to this cause the first year, twelve to excessive study, and fourteen to fright, disappointed ambition, political excitement and jealousy."

These and kindred causes were recognized less and less as efficient influences in the production of disease, in the lifetime of Dr. Brigham, under the light of experience. The first year, religious anxiety represented, in the table of causes, eighteen and 15-100 per cent, the second year nine and 81-100 per cent, the third year eight and 15-100 per cent, the fourth year five and 92-100 per cent, the fifth year seven and 22-100 per cent, and the sixth year (the last report made by Dr. Brigham) six and 40-100 per cent. There was also equally marked diminution in other supposed moral causes, and increase in physical. Thus we perceive that more extended experience and more careful observation of these cases, revealed the existence of disordered physical health as the efficient cause of insanity, and the religious

depression, or other moral manifestations, as only exciting causes, or as incidental effects. This established, was an important advance. Rest, nutrition, medication, could then be presented, in truth, as the relief of sorrow. The decrease of religious anxiety, as an attributed cause of insanity, has, therefore, not been because people have been more or less religious at one period than another, or that new religious views have in the meantime been advanced. It is simply because of the steady progress of medical knowledge, deduced from patient investigation, intelligent observation and careful analysis of facts. Upon this point, then, what have we practically gained? These cases, thus understood, may be properly inquired into by spiritual as well as medical advisers, through their physical condition, and the sufferers themselves, especially in the earlier stages of melancholia (the form of mental disease of which religious depression is so often an accompaniment) will, when assured that their supreme unhappiness is but reflected from their physical depression, be more likely to understand their condition, and to appreciate and acquiesce in the necessary remedies for their restoration. Again, what an amount of anguish among friends is removed by the knowledge that this depressed state and awful sense of sin and guilt, of being forsaken by God and man, is indeed only a cloud without wind or rain; a weary, darkened spirit from weakness of the flesh; a shadow which will be dissipated on returning health, as the sun chases away the night by his coming.

The solution of cases, under this cause, is the solution of causation in melancholia in general, and of many cases, under other forms of mental disease, supposed to be dependent on moral causes, especially jealousy, suspicion, grief, excessive study and kindred influences. I have too frequently witnessed these supposed troubles vanish under returning health to doubt on this matter. To discover, then, under such supposed moral causes, that the true source of disease lies in physical disorders, is equivalent to substituting rest, sleep, food and medication for moral reasonings and difficult and vexed theological problems, and thus to bring the case within the range of medical skill. If these means will dispel the delusion of having committed the unpardonable sin, or of being turned into beasts or demons, and relieve and remove that general sense of intolerable misery which impels so many to attempt self-destruction as the only possible means of relief, then the physician will feel hopeful in the labor before him. We indeed think it is safe to infer that religious anxiety is rarely, if ever, a cause of insanity. The sublime faith of Christianity is rather

a safeguard against it, and is unquestionably a support under its scourging. We do not believe that insanity is produced by this cause directly, by a profound impression made through the sentiments and emotions upon the nervous system; or indirectly, by gradually undermining the general health. It will hardly be argued that depression is a phase of religious experience. As a general thing, the most wretched melancholics are members of churches, and often are the most humble and exemplary. However, a full answer, in our experience, is in the fact that this class of patients are gradually relieved of all depression and anxiety as health returns, and free from it on its full restoration."

Investigation and clinical observation constantly strengthen the conviction that more careful inquiry into this subject, by a more searching examination in each case on admission, and more patient and exhaustive inquiry of friends, with more thorough record and sifting of clinical facts while the patient is under treatment, would reveal, in a larger number of cases, the real operative causes inducing insanity. Such inquiry must also tend to place study and treatment on a true foundation, that is, of disease. Unfortunately, superstition and ignorance long prevented calm investigation, and stamped the disease in general estimation, and, in a large measure, in the view of medical men, as one but little amenable to treatment, and as mainly a condition demanding custody for safety. And this state of things unhappily still exists to such a degree as greatly to embarrass inquiry, and can only be dissipated by such investigations as will place insanity in the category of nervous diseases, to be studied and treated as other bodily diseases.

The history of hospitals for the insane for many years past is an invincible argument in this direction. Their transfer to the exclusive care and control of medical men; the increase of the medical staff of hospitals; the disuse of harsh and cruel means of restraint; the greater attention to medication, diet, ventilation, and all hygienic means; all indicate the subordination of custodial to medical considerations in the conduct of such establishments. *Post-mortem* examinations have, in many cases, verified the assumed pathological causation, and revealed the consecutive changes in the progress of the disease and the relations of symptoms observed to these changes, in a sufficient number of cases, to justify and encourage more careful and exhaustive investigation. Besides, the advance in physiological and pathological anatomy, in the progress of medical science, offers constantly increased and more reliable means of prose-

cuting such inquiries. The special attention now given to the nervous system, by the most able observers, is a further inducement to push inquiry in every possible direction, but especially toward changes in the functions or organic structure of the nervous system, that can throw any light on the subject. Again, the vast number of insane, and the possible fact of increase of the disease beyond the ratio of the increase of population, makes it all the more important and imperative that no opportunity should be neglected which promises the least light or relief.

Two years ago I recommended the appointment of a special pathologist, that such investigations might be made as are demanded by the progress of medical science. The managers of the asylum responded to this recommendation, and the results were so satisfactory, that I fully felt justified in asking that the appointment should be made a permanent addition to the medical staff. The facts and reasons for this were contained in my last annual report. Before it was transmitted to the Legislature, the portion relating to pathological work was submitted to His Excellency Governor Hoffman, who, in his annual message, made the following recommendation:

"In connection with the subject of insanity, I respectfully suggest that you will give favorable consideration to the application which will be made on behalf of the State Asylum at Utica, for authority to appoint a special pathologist for the duty of making such investigations as seem to be now demanded by medical science. The reason for this will be fully stated in the report of the superintendent of that institution, which will be transmitted to the Legislature."

A bill was passed by the Legislature authorizing the appointment of a pathologist, and Dr. E. R. Hun, who had filled the place for a year, was appointed. The course I suggested last year was to embrace—

"*First.* Examination of secretions in all stages of the disease."

"*Second.* The pulse under the sphygmograph to determine its force and character, and whether any, and if so, what co-incident relations its various phases may bear to physical states and psychological manifestations."

"*Third.* The pulse under the sphygmograph to show the influence of medicines on the circulation."

"*Fourth.* Examination with the ophthalmoscope to ascertain the relations of morbid changes in the optic nerve, vessels, etc., of the eye, to pathologic conditions of the brain and its membranes."

"*Fifth.* The skin, its temperature, color, elasticity, sensibility, etc., in the several forms and stages of the disease."

"*Sixth. Post-mortem* appearances, generally, and microscopically."

"*Seventh.* Photographic representations of morbid conditions and specimens."

The experience of another year has given no cause to change that course of investigation.

While experience shows that the morbid conditions of organs and tissues more frequently act on the brain than the converse, and thus disease of special organs, and general ill health from lowered vitality, precede and become the cause of the morbid state of the brain, ultimating in insanity; still there are cases where the general ill health and the insanity are due to an overworked brain, or the anxiety and prolonged tension and sleeplessness which are often the result of grief and pecuniary losses. Even here, however, the cause is physical, because insanity comes on only as a result of defective nutrition in the tissues, those of the brain included; the sleeplessness and deprivation of rest acting powerfully, not only against appetite and the simple ingestion of food, but also by wearying the nerve-tissues, and preventing ultimate cell nutrition. Thus some persons fail suddenly and rapidly, and die unexpectedly. We say these die of exhaustion. But they are not always emaciated, and thus exhausted. The brain gives way, fails in vital energy, and death ensues. Here the morbid action is not in the nature of shock,—of sudden arrest of heart-action by a sudden and powerful impression on the brain,—but of tension and wearing effort, steadily and powerfully depressing the vital energy.

We see constantly the influence of mental exercise and occupation on the health and growth of the brain. We recognize here the physiological law, that due exercise of an organ promotes its development and power. We recognize also a limit to this occupation, beyond which it is injurious. A child cannot profitably, or consistently with health, occupy the brain beyond a certain number of hours without rest. If mental work is pushed too far in children, growth may be arrested and cerebral development also. A development in bodily size may proceed, but the structure may be delicate. It is unquestionably true, also, that many bright children, under attempts at over-education, exhaust the vital energy, and recuperative growth in brain-tissue is lowered, while the animal functions are carried on well. The boy develops a strong, well-proportioned body, but is dull. Many parents and teachers are thus disappointed. This law, which runs through growth, applies equally to maturity; however, with this difference, that in maturity excesses bear fruit always in

disease. And it may be truly said that, as a rule, the brain is the last part of the organism to yield to disease, even under its own overwork and excesses. Says Dr. Gull, "the flatulent dyspepsia of the student, the tears of the distressed, the dry mouth of the anxious, and the jaundice of fright, daily remind us how far the cerebral influence extends."

In insanity, therefore, we have the dominating organ always deranged in function if not further. Whatever the cause may be, physical or mental, or whether the brain is primarily or secondarily affected, the condition in insanity is cerebral disease. Disease is what we have to deal with. Not disease of mind, for the mind, the spiritual principle, the immortal being, cannot be the subject of disease. The manifestations of the mind are disturbed and disordered when the brain, which is its organ, suffers. How mind and body exist here together in harmony in health, is quite as inexplicable as their disturbed relations in disease. Inquiry may never be able to solve the mystery of the relation between thought and the physical organism. "This our faculties are incompetent either to decide or to discover, but this short-coming of man's intelligence affects neither his duties nor his hopes, neither his fears nor his aspirations." (*Rolleston.*)

The expression "disease of mind" should have a place in the nomenclature of modern medical science with witchcraft and demonomania. They are alike the offspring of metaphysical speculation, alike misinterpretations of phenomena. Plato and Hippocrates, in their day, respectively represented the metaphysical and medical aspects of this disorder of the brain. Plato considered insanity, on the whole, a blessing. "A sufficiently clear proof that the Deity assigned prophetic power to *human madness*, is found in the fact that no one in his right senses has any concern with divinely inspired and true prophecy, which takes place only when the reasoning power is fettered by sleep, or alienated by disease or by enthusiasm." (*Timæus.*) Again: "The greatest blessings we have spring from madness, when granted by Divine bounty; for the prophetess at Delphi, and the priestesses of Dodona have, when mad, done many and noble services for Greece, both privately and publicly, but in their sober senses little or nothing." (*Phædius.*) Says Hippocrates: "Men ought to know that from nothing else but thence (the brain) come joys, despondency and lamentations. And by this, in an especial manner, we acquire wisdom and knowledge, and see and hear and know what are foul and what are fair, what are bad and what are good, what are sweet and what are unsavory; some we discriminate by habit, and

some we perceive by their utility. By this we distinguish objects of relish and disrelish, according to the seasons; and the same things do not always please us. And by the same organ we become mad and delirious, and fears and terrors assail us, some by night and some by day; and dreams and untimely wanderings, and cares that are not suitable, and ignorance of present circumstances, desuetude and unskillfulness. *All these things we endure* from the brain when it is not healthy."

To the philosopher or metaphysician, insanity is what they may choose to make it. To one of the sublime faith of Plato, who referred all the phenomena of nature which he could not interpret to a divine power, it is not strange that insanity should seem to be from the gods. Others, from another stand-point, have considered it also supernatural, but have assigned the phenomena to the influence of devils. To Hippocrates, who was a patient, earnest physician, who, with wondrous success, studied morbid phenomena, insanity was from an "unhealthy" brain. To others, again, to whom faith is not given to believe more than they can see and understand, or who do not choose to believe more, mind and all mental phenomena are mere physical results; mental manifestations of whatever order, hopes, fears, joys, sorrows, immortal longings, deep affections, are, like hunger and thirst and pain, but expressions of a physical organization; the restless mind of man, instead of being all we believe of it, an immortal spirit manifesting itself in this life and in this body, preparing for a life to come, and using the brain as an organ or instrument for its purposes, is a mere secretion of the brain, depending on its existence, and sickening and dying with it. Are we to account for anger, rage, jealousy, grief and all the violent manifestations of the passions as physiological states or disturbances of "brain secretions?" In physiology, causes and results must bear a uniform relation; and we should have for so much grief so many tears, and for so much provocation so much anger, and the like. Instead of having varied manifestations in the same individual as well as in different individuals, from the same causes, the manifestation should be uniform. Cabanis, who wrote nearly a century ago, expressed the materialistic theory thus:

"To obtain a true idea of the operations by which thought is eliminated, the brain must be considered as a particular organ, especially designed for its production; even as the stomach and intestines for carrying on digestion, the liver for secreting the bile, the parotid and maxillary and sublingual glands for the preparation of the salivary secretions.

"Impressions, on reaching the brain, stimulate it into activity; as ailments, being introduced into the stomach, excite it to a more abundant secretion of the gastric juices, and to those movements which favor their proper assimilation. The natural function of the one is to receive every individual impression, to attach to it certain indices, to combine the different impressions, to compare them among themselves, to draw from them certain judgments and determinations; as the function of the other is to act upon nutritive substances, whose presence stimulates it, to dissolve them, and to assimilate their juices to our nature.

"If it be said that the organic movements by which the functions of the brain are executed are unknown to us, it may be replied that the action by which the nerves of the stomach determine the different operations constituting digestion, the manner in which they impregnate the gastric juices with the most active dissolving power, do not disclose themselves more to our researches! We see the ailments pass into the viscus, with new qualities, and we conclude that it has really caused them to undergo this alteration. We equally see impressions arise to the brain through the medium of the nerves; they are then isolated and without coherence. The viscus enters into action; it acts upon them, and soon it evolves them transformed into ideas, of which the language of physiognomy and of gesture, or the signs of speech or writing, are the outward manifestations. We conclude with the same certainty that the brain in some manner digests the impressions: that it produces organically the seretion of thought.

"This, then, fully resolves the difficulty raised by those who, regarding sensation as a passive faculty, do not understand how the acts of judging, reasoning, imagining, should be nothing else but perceiving. This difficulty vanishes, when we recognize, in all these different operations, only the action of the brain upon the impressions which are transmitted to it.

"But if, moreover, we observe that the movement, of which every action of the organ presupposes the existence, is in the animal economy only a modification, a transformation, of sensation, we shall see that we are excused from making any changes in the doctrine of the modern analysts, and that all the physiological or moral phenomena are always brought back, in the last result, to the faculty of sensation." (Cabanis, *Rapports du Physique et du Moral de l' homme*, vol. i, p. 124.)

Recently Dr. W. A. Hammond, of New York, in a work on "*Sleep*,

and its Derangements," has reasserted this old theory, and expresses his views of mind in the following language:

"Writers who contend for the doctrine of constant mental activity, regard the brain as the organ or tool of the mind; a structure which the mind makes use of in order to manifest itself. Such a theory is certain to lead them into difficulties, and is contrary to all the teaching of physiology. The full discussion of this question would be out of place here; I will, therefore, only state that this work is written from the stand-point of regarding the mind as nothing more than the result of cerebral action. Just as a good liver secretes good bile, a good candle gives good light, and good coal a good fire, so does a good brain give a good mind. When the brain is quiescent there is no mind."

It will thus be seen that the introduction of materialistic theories, even into the domain of psychology, is nothing new. Neither is Cabanis the only French writer who has pushed Locke's theory of sensation to its ultimate results of materialism and atheism. But it would be a thing much to be deprecated, that the generous and catholic spirit of modern scientific investigation should be narrowed and hindered by an attempt to revive the exploded vagaries of the French materialism of the encyclopedists and the revolution. The best writers of the present day, however, if they refuse to bend the conclusions of science in the interests of religion, on the other hand will much less consent to commit science to a purely conjectural theory, which militates against moral order and social welfare no less than against the common sense of mankind.

We do not look at mind from the stand-point of regarding it "as nothing more than the result of cerebral action," and therefore as a material substance, a mere secretion liable to disease and death. We regard the brain as the organ of the mind, and we cannot perceive that such a theory conflicts with physiology or is contrary to its teachings. If the mind is a material substance, a secretion of the brain, as bile is a secretion of the liver, then the sublime faith of the Christian religion is of little consequence to man, and they who work for the advancement of medical science truly labor in vain. If, however, this body is what revelation declares it to be (the temple of the mind or spirit which in it dwells, awaiting a life to come), and what science shows it to be, a living organism, *under definite laws*, then it is worth our care, as the dwelling-place of an immortal being.

Says Dr. Acland, in an address at Oxford, before the Medical Association of Great Britain and Ireland, when taking the chair as presi-

dent: "The physician sees in the body of man the material structure by which alone the known operations of the mind of man are possible in this world, the organs by which alone he can work his earthly work, whether it be the work which he shares in common with the beasts of the field, or the work through which he can enter into conscious relation to his unapproachable Creator; the frame by which, while bound down in an earthly charnel-house, he lifts his eyes and strains his heart with yearnings ineffable toward a higher nature, and obeys the upward-tending impulses of affections strong unto death; affections so pure and so divine as to lose in the love of others even the consciousness of self."

We do not believe that mental phenomena can be accounted for by physiology, much less that the teachings of physiology necessitate or even lead to materialism.

Professor Rolleston, who stands in the foremost rank of teachers in physiology, uses this emphatic language: "The physiologist as such has nothing to do with the data of psychology, which do not admit of being weighed or measured, nor of having their force expressed in inches or ounces." Psychical manifestations, mental phenomena, he declares to be "facts in just as true a sense as any which scalpel or callipers, which weights or measures, can disclose;" and holds "that our higher and diviner life is not a mere result of the abundance of our (brain) convolutions." And again: "I believe, however, that, if men would take as much and the same care in these psychological questions as the physiologist does in his experiments and observations, to overlook none of the conditions and circumstances of the entire complex of phenomena upon which they undertake to decide, they would come to see that alone, and often behind, but always beside and even beyond the whirl of his emotions and the smoothly fitting and rapidly playing machinery of his ratiocinative and other mental faculties, there stands for each man a single undecomposable something—to wit, himself. This something lives in his consciousness, moves in his will, and knows that for the employment and working of the entire apparatus of feelings and reasonings, it is individually and indivisibly responsible. Its utterances have but a still small voice, and the turmoil and noise of its own machinery may, even while working healthily, entirely mask and overwhelm them. But if we withdraw ourselves from time to time out of the smoke and tarnish of the furnace, we can hear plainly enough that, howsoever the engine may have come together, and with its present being, the *engineer*, at all events, is no result of any process of accretion and agglomeration. Science, business,

and pleasure are but correlations of the machinery in its different applications and activities; *we* are something beside all this, manifesting ourselves to others in the decisions of our *will*, and manifesting ourselves to ourselves in our aspirations and conciousness of responsibilities."

Says Mr. Herbert Spencer: "It may be safely affirmed that physiology, which is an interpretation of the physical processes which go on in organisms in terms known to natural science, ceases to be physiology when it imports into its interpretations any psychical factor, a factor which no physical research whatever can disclose or identify, or get the remotest glimpse of."

Prof. Lionel S. Beale says: "Every one will admit that the nerve-tissue of the brain is the instrument through which alone thinking power works and mind acts." He subsequently thus disposes of the materialistic theory of mind:

"Some have looked upon brain as a sort of gland by which thoughts and ideas are formed or secreted, as if thought, which can neither be touched, weighed, measured, or in any way physically estimated, was a thing allied to the bile, the saliva, or the gastric juice which are material substances, and can be analyzed and otherwise experimentally studied. It would not be more unreasonable to maintain design or will to be a part of the material framework of the organism, than to assert that mind, like certain kinds of matter, is secreted. Thought is no more material than that peculiar capacity which makes living matter of a certain kind at length become oak, cabbage, dog, man, etc. Nay, it is further removed from the material, for while this property or power influences the very particles of matter, and makes them take up certain fixed and definite positions, thought only produces a sort of evanescent vibration, which results in the expression of ideas which are themselves as immaterial as the thought itself.

"Mental energy has been regarded as the *function* of the brain, but if it be so, it is a *function* of a very different order from that discharged by other organs. *Function* implies an act in which will, purpose, design, are not concerned, and in which material changes can be proved to take place. The function of a gland is to produce a secretion. Certain conditions necessitate the production of this or that particular secretion, which may vary to some extent, according as the conditions are changed. The function of a muscle is to contract and become relaxed, but the material change only occurs in definite directions, necessitated by the structure of the instrument and the force which acts upon it. The exercise of choice is neither possible

nor conceivable. So, too, with reference to the function of nerves. These transmit currents. The paths which the currents are to traverse having been determined and formed, the currents are developed and transmitted along the nerves.

"But the *function* of the organ of the mind is in operation very different from any of these. Its great characteristic is choice, selective capacity. If the cells of the liver chose for themselves whether they would secrete bile or not, or determined the kind of bile to be secreted, or the bile chose for itself by which ducts it should pass, whether it should flow quickly, slowly; or not at all; if the muscle contracted now in one part, now in another, according as it willed, if it elected to contract in one direction, and then in a different one; if the nerve cells decided among themselves which should produce current and which not; if the current chose to run along one fiber at one time and then along another according to the object it had in view, then, but only then, as it seems to me, could mental activity be regarded as in any way analogous to the function of an organ or of a tissue. To look upon mental action as a mere function of the brain is a fundamental error, and unpardonable in those who have really studied the structure and action of secreting organs and nerve organs.

"Mental activity may rather be compared to that marvelous power, property or force, which enables the liver cell to *form* what we call bile, which renders possible that change in shape of the ultimate particles of muscle which gives rise to contraction, and determines the change in the ultimate molecules of nerve matter upon which the current depends; but this power is not the function, it is that which alone renders function possible. But even this comparison is not a true one, for the power above referred to acts as if it were of some necessity, while the remarkable characteristic of mental action is freedom of choice. Certain conditions given, the liver cell *must* form bile, the muscle *must* contract, the nerve cell *must* give rise to, and the nerve fiber *must* transmit the current; but is it conceivable that under certain conditions actual or supposed, the brain *must* think? Is what I am now writing but the result of the distribution of a little extra proportion of certain nutriment constituents and oxygen to my nerve cells, which thereby compels me to say all these things? Have I no choice? *must* I say all this, and in the precise way in which it is here said? All these things would surely have been said in a far better and more perfect manner if the ideas had been formed like a secretion by a gland, independently of experience and without any efforts of my own. All our glands perform their work perfectly when their

formation is complete. They require no teaching, and they work without effort. There is nothing in the action of a gland which at all corresponds to the improvement in capacity resulting from exercise, which is so remarkable in the case of cerebral nervous action. The general tissues and organs at least of those persons who have reached or passed middle age, performed their functions some years ago as well as, and I fear in some respects even better than they do now. *Will* has exerted, and can exert, no direct influence. But it is very different in regard to the organ of the mind and the tissues concerned in intellectual action. Every one knows that the degree of perfection which that has attained, or will attain, is determined in great measure by his own efforts, by his own will. The thinking instrument of one individual is not capable of being perfected in the same degree as that of another, but it is quite certain that each may be improved and made to work more perfectly, if its possessor determines that this shall be; nay, I think I may say, if he will not interfere actively to prevent its improvement; for the natural tendency of the mind is to exercise itself, and, in doing so, the instrument which it directs, necessarily improves. As the mechanism becomes more perfect, the pleasure afforded by its working becomes greater, and to real desire and sustained effort on the part of the mind soon succeeds improvement in the structure of the healthy instrument by which the attainment of the end desired is rendered possible." (*Medical Times and Gazette.*)

Dr. Thomas Hun, in an article in the *American Journal of Insanity*, in 1846, on the "*Relations of Physiology to Psychology*," says "Some have denied the existence of mind, and have made thought an attribute of the substance of matter. These are materialists. Others have made matter only a mode of manifestation of mind. These are spiritualists. While a third class have endeavored to find a third term which should include both matter and mind." These classes have been denominated Somatists, Psychists, and Somato-Psychists. Under either theory of investigation, Dr. Hun at that early day declared it impracticable to advance in psychology, and experience has verified this, as shown by the declarations of Rolleston, Spencer and Beale. "We have to study," says Dr. Hun, "not the nature of the two substances, nor the nature of their relations, but this relation itself as it manifests itself to the senses and to conciousness. The great questions for us to answer are these: What nerve movements correspond to given mental acts? What is the mechanism of these movements? and how are the mental acts affected by changes in the nervous matter in the rest of the body? * * * * Physiology is a science of facts cogni-

zable to the five senses, and uses the same modes of investigation as the other physical sciences. Psychology is the science of mind. It is founded on facts of conciousness which are not cognizable to the senses. It embraces all the mental operations, which are very different from changes in nervous matter, and hence psychology is not merely a chapter of physiology, but a separate and independent science."

To sum up this whole subject, there are to be observed two prominent and vitally important points, which, to our mind, demonstrate the utter falsity and even impracticability of the materialistic theory of mind. One is *spontaneity*; the other, *responsibility*. The idea or notion of spontaneity we know to be a reality of our own consciousness, as patent and demonstrable as any fact of science, and yet, to use the precise and clear-cut scientific language of Herbert Spencer, it is impossible to make this spontaneity a "factor" in any mere natural or physical process whatever. Our very conception of the material altogether forbids it. Even in that last step where physical science approaches nearest the domain of metaphysics, the attempt to arrive at some definition of force itself, the idea of spontaneity is by no means begun to be reached, or in any way involved. When it comes to that, it comes to God himself, whatever man may choose to name Him, "Jehovah, Jove, or Lord."

The other point, which is the notion of moral responsibilty, is one remove further even than spontaneity, from all conception of the material and, therefore, much less reducible to any physical or material process. It would be as easy to deny *in toto* intellectual phenomena as to deny the reality of our idea of moral responsibility; but the notion of responsibility itself is a direct contradiction of the idea which arises out of such a thing as physiological secretion, or any other mere process of nature governed by definite and unchangeable laws. It would be impossible to connect the two, or in Herbert Spencer's phrase, to make them coördinate "factors" in any intelligible result whatever. Whatever the animus of such a position may be, the result must be the getting rid of the idea of moral responsibility altogether. Science of this kind, instead of being a blessing to the world, would contribute only to anarchy and moral disorder, even if it did not utterly destroy the self-respect of any one who should profess himself proficient in it.

Science needs neither doubt nor skepticism as a condition for her advancement. Her aim is to discover and read the laws and processes of nature herself, imprinted by the Creator, and she works, to use the

language of Bacon, "keeping the eye steadily fixed upon the facts of nature, and so seeing their images simply as they are." We believe that physiological science will so advance that every process in the complex phenomena of physical life, in health and disease, shall be read and revealed and understood.

The true and only method by which insanity can be studied is that followed in all other diseases. The physical lesions are the subjects of primary importance. These must be studied through physiology and pathology. The mental manifestations are here secondary and dependent. "Organs and tissues," says Dr. Gull, "have each their own life, and correlative with it, their own tendencies to disease, and their specific power and mode of repair," and "the purpose of our study is to trace these tendencies to their sources on the one hand, and to their effects on the other."

We say that insanity is a bodily disorder; that it is a disease of the brain. This does not imply that there is something to be thrown off, in the character of some morbid entity. It simply means that certain changes have taken place in the brain, or its investing membranes, which imply a departure from healthy physiological action, and that in consequence of these changes there is more or less prolonged disturbance of the mind. The physician recognizes the delirium of fever, and refers its origin to the brain. The convulsions of infancy and childhood, from the presence of worms in the intestines, or indigestible materials in the stomach, or the process of teething, he refers to the brain. In the former, he may refer the remote cause to some poison; but the immediate cause is a tissue-change. If this change is gone through with within certain limits, he looks for recovery; if not, under further tissue-change, the patient sinks and dies. The remote or predisposing cause of the latter he calls morbid irritation. If the stomach and bowels are emptied of the offending matters, and the irritation of teething relieved before tissue-changes follow the convulsions, recovery will take place. In other words, if the constitutional disturbance of the nervous system, in the one case, from poison, and the local disturbance of the nervous system in the other, from irritation, may be relieved before certain organic changes occur, recovery takes place; if not, partial recovery, or death, results.

If the carotid arteries are pressed upon by a tumor, or the circulation of the brain interfered with by aneurism, we have what is denominated a hyperæmic state of the brain; not a determination of blood to the brain, but the blood detained by the vessels dilated. Clinical study and physiology have taught us to anticipate the resulting con-

sequences of such a state. The physician is not surprised to find insanity follow; but this is the exceptional result. He is quite as likely to find failure of the general health, from feeble action of the heart, due to the condition of the brain. Again we have an anæmic or bloodless condition of the brain from copious hemorrhage after childbirth, or from other causes, and general enfeeblement results, or convulsions, delirium, or insanity may follow. Can we, by careful clinical observation, ever be able to determine why one should result, instead of the other? or why we may have in such a case, convulsions, then delirium, and afterward insanity? Can we hope to answer these questions, without the aid of pathological investigations, made *post-mortem?* We may be satisfied to reply that convulsion follows hemorrhage, under the physiological law that muscular spasm supervenes upon sudden and copious loss of blood, because muscular irritability is thus increased, and that the pathological state is one of depressed vital energy, and here we have a clue to treatment. Delirium following convulsion, or following the hemorrhage without convulsion, we may also explain under physiological and pathological laws.

Now should we stop inquiry here, when insanity results? Can we admit that insanity is anything more or less than a pathological condition, or that it lies beyond the boundaries of ordinary and legitimate medical study, and beyond the range of clinical observation or pathological investigation? Will not the patient study which elucidates one be likely to elucidate the other? But in the latter the mind is affected? So is it in delirium. So is it, in a degree, in its operations, in all diseases, when the brain is in any way involved. So is it, when the brain is under the influence of alcohol, or certain drugs. In all abnormal conditions of the brain, however induced, we have a degree of disturbance in mental operations. At a certain stage of intoxication, there is conciousness of the fact, and full control and direction of mental operations; at another stage, the brain, the instrument or organ of the mind, as we believe, is so overwhelmed that it cannot be used. We recognize in all these conditions simply physical disturbance, either physiological or pathological. A proper regard for the teachings of physiology does not require that, in the last condition mentioned, when the brain is "quiescent," we must conclude that "there is no mind." On the other hand, it will not be argued that, in these conditions of mental disturbance, there can be either a physiological or pathological state of *mind* itself! We do not *treat* these mental phenomena; but we regard them simply as exponents of physical

states. We hold that it is not necessary, in order to establish the physical origin and nature of insanity, or other cerebral diseases, to show that every case is of such origin and nature. If, in a single case insanity is shown to come on as the result of well-recognized bodily disease, and the mental disturbance disappears *pari passu* with the physical restoration, the argument is invincible. We do not treat the mental phenomena which appear, as indices of the cerebral disorder; but we point out to the patient his changed mental condition, and endeavor to show him that his delirious conceptions are delusions, and result from the morbid condition of his brain; and that with restoration to health these delusions and misconceptions will vanish. Many may be convinced of this; and though the delusions do not disappear with this conviction, yet persons may, and often do, so far keep constantly in mind their true condition, and exercise such control as largely promotes their recovery. The mind, by this effort uses the brain; and, by the exercise of its legitimate dominating power, moderates its action in some directions, and increases it in others. The mind "exercises choice," and controls itself, and by limiting and modifying its use of its organ, the brain, aids in the restoration of that organ. In many instances people recognize the approach of insanity in themselves, not simply from vague and unusual sensations as pains in the head, sleeplessness, etc., but recognize a marked change in their way of thinking, feeling, and acting; a change which not only does not commend itself to their judgment, but is also against and repugnant to their wishes and desires. Under such states of mind persons come to the asylum for advice; and since my connection with it, a number have come thus alone, and insisted on admission. I have mentioned some of these cases in my reports. In one instance, the person made application himself to the county judge, obtained an order for his admission and brought it himself. Another case was that of a woman who came from a distant part of the State and informed me that she had left home in the night, without the knowledge of her family, because they did not believe she was insane, and would not assent to her coming to the asylum; asked me to telegraph her arrival to her family, and write and explain to them her case. She then stated to me how delusions developed while she was watching over an invalid mother; that she recognized the delusions, as such, but as she failed in health was unable to do so at all times, and therefore felt she must be getting insane. She remained, and after a time passed into a state of acute mania, and, when apparently recovering, committed suicide.

Another case was that of a young girl. She for some time observed

in herself periods of mental depression and exaltation; after a time strong suicidal suggestions came during the periods of depression, and during those of exaltation, an idea that she was destined for some great work in the church. She thought she might be insane. Her health, never robust, was gradually failing. She left home in the night to drown herself in the canal, but on reaching it she was quite chilled, the night being cool. She then thought her changed condition might possibly after all be insanity, and not the despair of a lost soul. She therefore resolved to come to the asylum, and state her case, and then, if she were insane, try and get well; and if not considered insane, end an existence which to her seemed only an injury to the world. She first stated her case, and when told she was insane, related the circumstances above, which were verified. She actually walked into the water. She remained in the asylum, passed into deeper melancholia, and then became demented, and finally recovered. Both these women were feeble and anæmic, the blood lessened in quantity, and depreciated in quality.

I could present, from my recorded experience, a number of such illustrations, showing the appreciation of insanity and the dominating power of mind. In the wards of the asylum this is a daily experience. Patients not only recognize that they are insane, but make every effort at control; and many take food and exercise, to both of which they feel the extremest repugnance, simply as a duty, and stimulated by the hope of recovery *held* out to them, and which hope they only faintly grasp. While writing I am interrupted by the admission of two cases, a man and woman. The friends and physician of the man represent the case as a recent one, dating but a few weeks back to some eccentric conduct; and declare the case as somewhat remarkable, because they can find no cause for the insanity. Yet a careful examination shows that the man has been steadily breaking down in general health for two years. That he is generally anæmic, and has cerebral anæmia to such a degree that his pupils are not only enormously dilated, but scarcely contract at all under the influence of light. He has hallucinations of sight and hearing from this condition. He moves about the office like a man half dreaming; admits he is sick, but does not see why he should be called crazy. When asked how he reconciles certain conduct with sanity, says he never was guilty of it. When all the circumstances are related to him, he replies, "I have some recollection of that, but I do not know why I did it." He has great muscular languor, has passed the period of cerebral excitement, and is dementing.

The woman denies her insanity. Says she is a great magnetic healer; has received the baptism of the Holy Ghost, and unction from God; that her mind has been illuminated so that she understands science, because it is revealed to her; that she will let the world know this change, and intends to speak in Mechanics' hall in Utica, and show what true religion is, and what magnetic healing is. She admits she has not been well for months, and has suffered from intense headaches; but claims she is now well, better than she has been for years. She is incoherent in conversation, exalted in her ideas, disdainful in manner, indignant at being called insane, threatens the consequences of confining such a person as she is. Her muscles are tense. She moves about the office with great muscular firmness, and spasmodically closes her hands and compresses her lips. She is anæmic, almost colorless. Her pupils are greatly dilated; her gums and tongue are pale. Although she is indignant, angry, her emotions wrought up to a high point, and she is on the verge of maniacal raving, she does not change color. This woman's whole appearance, conduct, and manner of speech, are in direct contrast with her character in health. The anæmic state of the brain is the cause of the insanity. The muscular system is in a state of abnormal activity, "a neuro-pathology from the brain to the tissues." This patient has good appetite and digestion, and says she is free from all pains or uncomfortable sensations. Has this woman disease, as that term is ordinarily used and understood in medicine, or is the brain, in the language of materialism, "secreting force"* of abnormal quality?

We say, the mental phenomena are due to the anæmic condition of the brain. This woman has a large active brain, and it dominates over the whole organism, in its present state. While she is really in a state of debility, the brain exercises power over the voluntary muscles quite as fully in this state of irritation, with a pulse under eighty, as it would in the vascular activity of fever delirium, with a pulse over 100. However, the cause to be truly assigned in these cases, is the generally depressed health, inducing the anæmic state of the brain, and nervous system. Both these cases are brought to the asylum as soon as the insanity is recognized, as both are surrounded by intelligent friends, and have conscientious physicians. The former of these cases might have been treated at home, if his physician had received the same degree of instruction in regard to insanity that he did in regard to apoplexy, paralysis and other disorders of

* The mind of man may be defined as a force developed by nervous action. *Journal of Psychological Medicine*, July, 1870.

the brain and nervous system. In contrast with this prompt action in securing treatment, is the unfortunate delay in the vast majority of cases until the period of recovery is past. Such fatal delay has characterized more than half of the 480 admitted to the State asylum this year. Many of those received have not only suffered from delay, but from injudicious, though well-intended treatment. Cases of melancholia from over-work, and the gradual failure of the tissues from age, and the consequent lowered vital energy, have been bled, blistered, setoned, and purged. Old ulcers, which nature had kindly healed for years, reopened afresh, all under the vague general idea of counter-irritation, and this when irritation from deficient and impoverished blood was a persistent pathologic state. In one case, a feeble old melancholic woman, "a mercurial, alterative course," was added, producing salivation.

Without raising the question as to how far we have advanced in the recognition of the physical symptoms of insanity; or how far we are able to diagnosticate the disease by physical signs; or how far we should be able to verify a state of mind, claimed as insanity, by the physical indications present; or how far we should be required, in examining criminal cases, in testing possible or probable feigning, to adduce physical signs in evidence; we may truly say, that only through pathology can we hope to advance in diagnosis. It is not necessary, for success in this direction, that we should attempt the study of the manner in which the spiritual being is associated with the animal existence, or to define the mysterious mutual relation and influences between them. It is sufficient that we should study the morbid or disordered states of body which are competent to induce such changes in the brain as cause that altered or delusional mental state denominated insanity; and the physical signs which indicate the existence and progress of such brain changes.

It may be safely assumed that experience has given us some fundamental starting points;

1st. Disease of any part of the organism may be the pathologic cause of insanity.

2d. In such cases insanity is not manifested until the brain is actually involved.

3d. Disease of the brain or its membranes may be the primary, exciting cause of insanity, and other parts of the organism subsequently become affected.

4th. Insanity more frequently has its primary origin in pathologic states outside the brain, than in primary diseases of the brain.

5th. There are physical symptoms and signs of brain diseases, which experience has enabled us to recognize as pathognostic of certain brain-changes; by knowledge of which we are able to anticipate and understand the progress of cerebral diseases.

While we may admit that, in a given morbid condition of the brain and system generally, the treatment would be the same whether the brain or other parts of the organism were first affected, it is nevertheless of the highest importance to study and discover not only the relations of symptoms and morbid conditions, but the relations as to priority and sequence, for thus alone can we construct a true pathology, and thus alone establish an intelligent system of preventive treatment. If we can know the sequence of symptoms and conditions, we can anticipate and avert, arrest or modify the ultimate result of pathologic processes. If we can, by large clinical observation, determine what disorded states of the system are most likely to act on the brain, we gain an important point. It is for us to inquire, therefore,

1st. Whether there are specific changes in the brain in insanity, and if so, whether there are any means of ascertaining positively or proximately what those changes are?

2d. Are there physical signs and symptoms indicating the presence and progress of such changes, which may be detected and relied upon, and what these are?

3d. Are there *post-mortem* appearances in the brains of those who die insane, which would justify the assumption that morbid cerebral changes were the potential and only ultimate causation of insanity?

4th. Are there any sound reasons for an assumption that the mind can overthrow itself, independent of cerebral changes?

5th. Do the secretions of the skin, kidneys, etc., throw any light upon the morbid condition of the brain in insanity, either regarding its pathologic state, its nutrition, or action?

The important questions in each case are: What are the lesions? What is the physical diagnosis? The gravity of the case is by no means measured by the intensity of the mental manifestations. It constantly happens that, associated with trifling changes, there is great mental disturbance, and but little with more serious lesions. What are denominated mental symptoms have a subordinate place in diagnosis as well as in treatment. The mental manifestations, indeed, have the same relation to diagnosis and treatment that mental phenomna hold in delirium tremens, fevers, and diseases of children. They are symptoms, but only significant of conditions of the nervous system,

which *conditions* are to be treated. In all the disorders of the brain, we mark carefully what symptoms or groups of symptoms given cases manifest; and by this clinical observation, and by a knowledge of physiological laws, and by *post-mortem* examinations, we learn to interpret the morbid changes going on within the skull. There are no reasons why insanity should prove an exception to this rule. Until within a few years, diseases of the spinal cord were obscure, and the differential diagnosis anything but certain. But the recent investigations of Bernard, Brown-Sequard, Kussmaul, Van der Kolk, Romberg, Radcliff, Virchow, Bouchard and other neuro-pathologists have solved many of the greatest difficulties, and promise the most thorough elucidation of all. Among the most important practical considerations, overlooked in insanity, is the fact that organic changes in the brain are likely to occur very soon after the first morbid functional action is set up. To the lack of recognition of this fact must be attributed the vast multitude of chronic cases. Any bodily condition which disturbs the mind is too important to be overlooked or ignored. Prolonged wakefulness, though it may not apparently disturb the mind, indicates a condition of the brain which is not natural, and which should be inquired into. When this is associated with depressions, groundless apprehensions, suspicions, and uneasiness, the case is one of grave import, and should command medical attention. Such a condition is significant of physical disturbance, and foreshadows insanity.

TABLE showing the analysis and the per centage of moral, physical and unascertained causes as recorded in the admissions for twenty-eight years.

ANALYSIS OF CAUSES.

	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.
Moral causes	128	108	106	110	127	116	100	88	110	117	107	96	55	45
Physical causes	93	93	93	95	139	160	141	242	229	261	292	231	187	158
Unascertained causes	55	74	94	132	162	129	121	37	27	12	25	63	33	39

PER CENTAGE OF CAUSES.

Moral causes	46.38	39.27	36.18	32.64	29.67	28.64	27.62	23.98	30.05	30.00	28.07	24.62	20.00	18.60
Physical causes	33.70	33.82	31.74	28.19	32.48	39.51	38.95	65.94	62.57	66.92	68.87	59.23	68.00	65.29
Unascertained causes	19.33	26.91	32.08	39.17	37.85	31.85	33.42	10.08	7.37	3.08	5.89	16.15	12.00	16.11

TABLE showing the analysis and the per centage of moral, physical and unascertained causes, etc.—(Continued).

Analysis of Causes.

	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.
Moral causes	31	63	57	47	40	33	26	21	19	12				
Physical causes	157	221	212	257	184	197	208	242	261	263	321	296	378	432
Unascertained causes	47	49	43	53	71	57	53	56	76	113	80	86	85	49

Per centage of Causes.

Moral causes	13 19	18.92	18.27	13.95	13.56	11.50	9.06	6.58	5.41	3.09				
Physical causes	66.81	66.37	67.95	70.33	62.37	68.64	72.48	75.86	73.35	67.78	80.05	77.49	81.65	88.66
Unascertained causes	20.00	14.65	13.78	15.73	24.07	19.86	18.46	17.55	21.24	29.12	19.95	22.51	18.35	11.34

ARTICLE XIX.

Fracture of one of the Bones of the Spinal Column, accompanied with dislocation. By P. O. WILLIAMS, M. D.,

Upon the 30th of June, 1869, Martin Armstrong, aged 29 years, of good constitution and temperate habits, while leaning forward as he sat astride of the binder upon a load of hay when entering the barn, received a severe injury by coming forcibly in contact with the beam over the doors.

He was carried into the house, and Dr. Van Dyck, their family physician, summoned in attendance, who, after examining his injuries, sent for me.

Upon my arrival I found the patient pale, faint, helpless, partially insensible, and laboring under a palsy of the lower extremities, caused by a fracture through the arch of the eleventh dorsal vertebra, accompanied with a dislocation one inch forward, of the superior upon the inferior portion of the body.

By means of extension, counter-extension and manipulation, the injured parts were restored to their normal position, and retained in that position, by the application of two sets of splints.

The one, composed of six layers of thin pasteboard, from three to seven inches in width, well padded with cotton, and applied directly over the spine, from the sixth cervical vertebra to the coccyx.

The other of the same length, composed of two strips of bass-wood, in thickness one-eighth of an inch; in width, one and one-fourth inches, were quilted two inches apart, into a nicely fitting jacket, extending from the neck to the pubes, with perineal pads attached to keep it from slipping upward.

The pasteboard, made pliable by being saturated with warm water, adapted itself to the unevenness of the spinal column, and when dry made with the side splints (all kept in position by the jacket pinned tightly around the body), a firm and easy support to the injured parts.

Contrary to our expectations, his symptoms so far improved from day to day, as to indicate a final recovery. Three weeks after receiving the injury, he had his first voluntary alvine, and four weeks after, his first voluntary urinary evacuation.

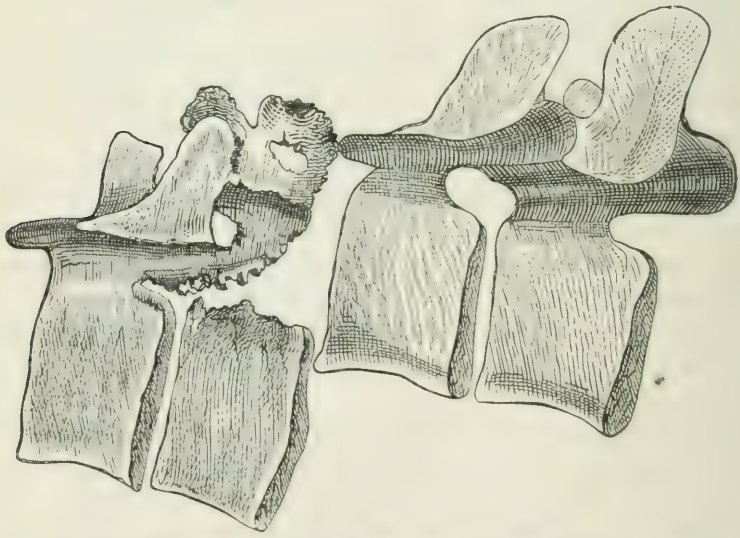
At the end of two months he could produce slight, irregular, and partially uncontrollable contractions of the muscles of the palsied

extremities; these contractions were preceded, accompanied and followed with heat, pains, pricklings and sometimes a tickling sensation, especially in the soles of the feet.

From this time forward there was a gradual increase of sensation and voluntary motion, with a corresponding decrease of pains, pricklings and other unpleasant symptoms. Three months after the injury, he was allowed to sit up in a rocking chair, and by rocking, perform such muscular exercise, as well as he could, without inconvenience or pain.

The splints were removed eight months after the injuries were received. At this date (January 10th, 1871) his general health is good, never better, and though laboring under a partial palsy of the inferior extremities, he manages, with the support of a cane, to perform most of the muscular motions of the body with comparative ease.

Too much credit cannot be given to the family physician for the careful and appropriate use of antimonials, anodynes, cathartics, and other antiphlogistic and sedative remedies.



The accompanying drawing is a fair representation of the fractured done and dislocation at the time of the injury.

P. S.—In November last Armstrong was married, and although I have asked no questions, I, as do also his friends, look upon his powers of procreation with no small degree of interest. Time will tell.

ARTICLE XX.

Inoculation with Tuberculous Matter. By L. BARTON, M. D.

As the subject of tubercle is attracting considerable attention at the present time, the following case that occurred in my own person, may possess some interest, in relation to the subject of inoculation with tuberculous matter.

June 30, 1840, in making an examination of the lungs, thirty hours after death, of a subject that died of tubercular phthisis, I accidentally cut the middle finger of my left hand, over the first joint; the wound was slight, not penetrating through the true skin.

The lungs of the subject possessed all the ordinary evidences of tubercle, but as no microscopical examination was made as to the nature or character of the disease, or as to whether the granular or caseous tubercle predominated, of course the case loses much of its interest, yet there could be no doubt as to the tuberculous nature of the disease, as the patient had passed through all the ordinary stages of phthisis, under my observation.

After completing the examination, I cleansed the wound thoroughly, and paid no more attention to it. It healed kindly, but remained somewhat red immediately around the cut. In about two weeks there appeared symptoms of inflammation, about the seat of the injury, and there soon appeared a row of hard *tubercles* in the line of the cut, about the size of millet seeds. In a few days *suppuration took* place, I punctured them, and thick pus was discharged.

In two weeks afterwards, a second and more numerous crop appeared, which I treated the same way.

In this manner the disease continued to progress for two years, in spite of all the means that I was able to devise or that other physicians suggested, till it had extended from the nail half way to the second joint and half way round the finger, producing a kind of *fungoid* thickening of the skin, which I was occasionally obliged to remove with caustics. The finger was never very painful, but was quite sensitive, any slight injury producing the most acute pain for a short time.

In the treatment, I gave the various topical preparations of iodine a thorough trial, but all to no purpose, except to hasten suppuration of the tubercles if applied too strong. The only treatment that

appeared to have the least effect toward removing the disease was pul. argen. nit., applied in such quantity as to remove a pelicle without producing sufficient inflammation to cause suppuration in the tubercles. These pelicles, when thus removed, were thickly studded with *tubercles* like thorns, about one line in length. By removing successive peelings in this way, suppuration was prevented and the diseased part all removed in a few months, except in a small place where the disease had extended to the areolar tissue in a cicatrix produced by the application of nitric acid to remove *fungus*, in which spot the disease remained for a long time, and required the application of nitrate of silver, in the manner aforesaid, once in two or three weeks, for nearly a year.

Suppuration never occurred after I commenced the application of pulverized nitrate of silver.

The finger remained more or less tender for a long time, and used to have paroxysms of a peculiar *sick* feeling, unlike anything else that I have ever experienced. This sensation gradually subsided, entirely disappearing in the course of a few years. The finger has since remained well and my general health is and has been good, not having any signs of a tubercular taint in the system.

I am aware that this case would possess much more interest if the disease on the finger had been microscopically demonstrated to be tuberculous, but I think all will acknowledge that the disease was unique. My opinion then was, and recent researches go to confirm my belief, that the disease on the finger was tuberculous, and inoculated at the time of the *post mortem*.

ARTICLE XXI.

A new method of arresting Surgical Hemorrhage by the Artery Constrictor, designed for the instantaneous Hermetic Closure of Arteries, without the use of Ligature or other foreign substance to be left in the wound. The Merit H. Cash Prize Essay. By S. Fleet Speir, M. D., Surgeon to the Brooklyn City Hospital, Surgeon to the Brooklyn Eye and Ear Infirmary, Surgeon to the Tumor and Cancer Department of the Brooklyn Dispensary, Fellow of the New York Academy of Medicine, and Member of the New York Pathological Society, etc., etc.

The armamentarium of the profession is already so burdened with variety of form and similarity of use that the introduction of any new instrument can be excused only on the ground that it enables us to accomplish the object in view more rapidly or more perfectly than heretofore.

The arrest of arterial hemorrhage is a subject of intense interest to every surgeon. It is attended at times with such hazards to the patient and with such difficulties to the surgeon, that a new method of accomplishing it may not be found unacceptable, the more especially as this method claims to have fulfilled the indications which are considered as those most to be desired by surgeons generally, viz.: The closure of arteries by some method which leaves no foreign substance attached to the vessel or in the wound, and is at the same time proof against secondary hemorrhage.

It is claimed in the following pages that such a result can be uniformly arrived at by the use of the instrument herein described as the artery constrictor.

This instrument is offered as a substitute for the ligature, acupressure and torsion.

It combines the most important principles of them all, and it is believed that it will be found a more ready method for the hermetic closure of arteries.

Description of the Artery Constrictor.

The artery constrictor consists of a flattened metal tube, six inches (more or less) in length, open at both ends, with a sliding steel tongue running its entire length, and having a vice arrangement at the upper extremity, by which it can be made to protrude from or retract within the tube or sheath. The lower end of the tongue is hook-shaped, so as to be adapted to the artery to be constricted. It is so shaped that,

having grasped an artery, it can be made to contract upon it by means of the vice at the upper end, which forces it within the sheath. (Fig. 1.)

The hook of the tongue is so shaped and grooved as to form only a compressing surface, by which means the artery, when acted upon by the force of the vice, is compelled to assume the form of the curve of the tongue, and the artery is constricted in such a way that its internal and middle coats give way, but the external coat is preserved intact. The severed internal and middle coats contract, retract, curl upon themselves, and are driven down the artery in the form of a plug by the continued pressure of the grooved tongue as it passes on into its sheath. The artery may now be slipped out of the instrument, and it will be found that the external coat has been compressed at the point where it was in contact with the instrument, and the internal and middle coats will be found severed and invaginated on either side of the constriction. This invagination of the internal and middle coats is of itself sufficient to arrest the flow of blood, and as soon as the current of blood is arrested in the vessel a coagulum forms upon the invaginated surface of the internal and middle coats, and this completes the occlusion of the artery.

It will be seen that the principle upon which the artery constrictor acts is the same as that which nature follows in her efforts to restore the integrity of a divided artery and arrest hemorrhage. It is based upon the anatomical structure and peculiar properties of the arteries, and is, in fact, the principle upon which all successful methods for closing arteries are based.

The principal methods at present in use for the arrest of arterial hemorrhage are three in number, viz.: Ligature, acupressure and torsion.

1st. *The Ligature.*—This method, which was introduced in the sixteenth century by Ambrose Paré, has accomplished all that was expected of it. It still claims the first place in the list. The ligature is, in general, safe, practicable and efficient, and it will doubtless sustain its reputation through all time. Yet there are occasions when it is not found to be all that is wished for, and other methods may be found more desirable.

The action of the ligature may be briefly stated as follows: A firm ligature, tied around a healthy artery with considerable force, cuts the brittle structure of the internal and middle coats, while it leaves the external and strongest coat of the artery intact, but firmly compressed in the knot. The drawing together of the knot favors the tendency of the internal and middle coats to contract and retract.

The current of blood being arrested in the end of the vessel, a coagulum quickly forms upon their rough edges, and thus the process is complete. The subsequent changes, inflammation, etc., which occur within and around the vessel do not concern us at present.

The steps in the process may be summed up thus:

1st. Division of the internal and middle coats.

2d. Retraction and contraction of the internal and middle coats.

3d. The internal coagulum.

4th. The support furnished by the external coat and the ligature. The ligature is finally removed by a gradual process of sloughing, and is discharged from the wound.

2d. *Acupressure.*—Next in importance to the ligature comes acupressure, originated in 1860 by Professor Simpson. It has since been practiced successfully by many surgeons, and is recognized as a reliable method of arresting hemorrhage. It can never be universally applicable, however, and perhaps the same might be said of any method.

The action of acupressure upon the artery is, in the main, similar to that of the ligature. There are, however, fewer steps in the process.

Dr. Hutchison, in his admirable essay on acupressure, says: "When acupressure has been employed, the internal surfaces of the artery have merely been placed in contact." "The needle, like the ligature, does the office of the external coagulum which forms when bleeding ceases spontaneously." "The blood between the needle and the first branch above becomes stagnant, and an internal coagulum is allowed to form." Adhesive inflammation is also excited by the pressure of the needles pressing the walls of the vessel together, and by the irritation resulting from the division of the artery, causing adhesion of the walls of the vessel to each other, and of the outer coat to the sheath, or other immediately adjacent tissues."

The advantages claimed for acupressure over the ligature are as follows:

1st. It is more simple, efficient and easy of application.

2d. Secondary hemorrhage, phlebitis, etc., are not so likely to occur with acupressure as with the ligature.

3d. Acupressure can be applied in some cases when the ligature cannot. For example, when the arteries are diseased or when the artery cannot be reached to apply the ligature.

4th. The needles can be removed in a few hours or days, thus leaving the wound free from all foreign bodies at a comparatively early

period, a condition favorable to the union of the wound by the first intention.

3d. *Torsion.*—Torsion has been practiced as a means of arresting hemorrhage with more or less success for a long time, and was reintroduced to the notice of the profession by Thierry, Amussat, Velpeau and others.

It is especially applicable to medium or small-sized arteries, and can never rank with the ligature or acupressure. Its chief advantage is its simplicity.

The mechanism of torsion consists in:

1st. The rupture of the internal and middle coats.

2d. Contraction and retraction of the internal and middle coats.

3d. The drawing together and twisting of the external coat.

4th. The formation of the internal coagulum.

It will be seen that torsion is no mean process. It can boast of all the advantages of both the other processes for closing arteries. Its failure as a hæmostatic process is not due to any inherent weakness, but rather to the difficulty of effecting all the steps of the operation with accuracy.

It is very difficult to perform the operation of torsion perfectly. Even experienced operators find that they frequently fail.

The instruments used are very crude, a pair of forceps. When, however, the operation is performed with care and it is complete, the effect is quite as certain as that produced by either of the other procedures.

Having given this short review of the leading methods of closing arteries, let us see what is the real difference in their claims, and determine their relative advantages by a comparison of the mode of action, and the advantages and disadvantages. Thus the ligature acts by:

1st. Division of the internal and middle coats.

2d. Contraction and retraction of the internal and middle coats.

3d. Coagulum formed in the interior of the vessel.

4th. Support furnished by the external coat and the ligature.

Advantages claimed for the ligature are:

1st. It is safe.

2d. It is efficient.

3d. It is easily applied.

4th. It requires but little skill or practice in its application.

The disadvantages of the ligature are:

1st. It cannot be always applied to diseased arteries with safety.

2d. It tends to prevent union by the first intention.

3d. It is liable to cause pyæmia and phlebitis.

Acupressure acts by:

1st. The contact of the internal surfaces of the artery from pressure of the needles.

2d. Coagulum formed in the interior of the vessel.

3d. Adhesive inflammation excited by the pressure of the needles.

Advantages claimed for acupressure are:

1st. It is efficient.

2d. It is safe.

3d. It is easily applied.

4th. There is less risk of pyæmia, etc.

5th. It favors union by the first intention.

The disadvantages of acupressure are:

1st. It cannot be applied in all situations.

2d. The danger of secondary hemorrhage should the clot fail to form, or should the clot break down from granular degeneration, or the needles be withdrawn too early.

3d. The time required, necessary instruments, variety of methods, and skill requisite for its proper performance.

Torsion acts by:

1st. Rupture of the internal and middle coats.

2d. Contraction and retraction of the internal and middle coats.

3d. The drawing together and twisting of the external coat.

4th. The internal coagulum.

Advantages claimed for torsion are:

1st. It is easily applied.

2d. It favors union by first intention.

3d. There is no risk of pyæmia, etc.

4th. In appropriate cases it is efficient and safe.

Disadvantages of torsion are:

1st. It cannot be applied to diseased arteries, or to arteries in their continuity.

2d. It is only applicable to arteries of medium size.

3d. The end of the artery is likely to be strangulated by too much twisting, and act as a foreign body in the wound.

4th. The want of a perfect method for its performance.

In looking over these methods for the arrest of hemorrhage, we are struck by the simplicity and efficiency of the two last, and by the fact that in reality but very little is required of art to arrest hemorrhage, even from large vessels. The provision for the success of our efforts

has been made to a great extent by nature in the anatomical structure and properties of the arteries.

The most simple of them all has quite as much to recommend it as the most complicated.

All of these methods have certain disadvantages which limit their application. None of them can be used with the same advantage in all cases, and there is yet room for improvement in the means at our disposal for the arrest of surgical hemorrhage; at least we can see no objection to offering for trial the method applied by the artery constrictor.

Based upon the same principles as the other procedures, it includes more of the combined advantages claimed for them than any one method alone.

The artery constrictor acts by:

1st. Rupture of the internal and middle coats.

2d. Contraction, retraction, and curling up of the internal and middle coats.

3d. Drawing together of the external coat over the internal and middle coats, causing them to become invaginated, while the external coat is drawn over them and firmly compressed.

4th. Formation of an internal coagulum.

5th. Maintaining the integrity of the external coat, and preserving the continuity of the vessel.

Advantages claimed for the artery constrictor are:

1st. It is efficient.

2d. It is safe.

3d. It is easily applied.

4th. No internal coagulum is necessary, as the invagination of the internal and middle coats is sufficient to arrest hemorrhage. It is, therefore, applicable where the blood is anæmic, etc.

5th. No foreign body is left in the wound, thus favoring union by the first intention.

6th. There is no risk of pyæmia or phlebitis.

7th. It is applicable to all sizes and to all conditions of the arteries where the external coat is perfect.

8th. It is a mechanical appliance which has a uniform effect, and it requires but little skill or practice in its application.

These are advantages which can be claimed by no other method, and if the instrument sustains itself in the hands of others, as it promises to do, it will be found useful in many cases where neither of the present modes of closing arteries could be equally well applied.

I have had occasion to make the following severe trials of the artery constrictor. The instrument has the same effect upon the dead artery as upon the living, but it acts more perfectly upon the living vessels.

Experiments upon Dead Arteries.

Applied to the femoral or other large-sized artery of man (post mortem), it had the effect (represented in the accompanying cut) of perfectly closing the vessel, so that it resisted the flow of water forced into it by means of a Davison's syringe. This experiment I have repeated frequently, and always with the same result.

Experiment upon a Living Dog.

The constrictor applied to the abdominal aorta of a living dog, closed the vessel perfectly; no blood escaped from the constricted end, which could be seen pulsating until the animal died from the combined effects of chloroform and the operation.

Experiments upon Living Sheep.

In the month of December the following operations were performed upon the carotid arteries of full sized sheep:

The common carotid artery was constricted in its continuity as rapidly as possible, and the constricted portion removed at once. This operation was performed to see the immediate effect upon the vessel, and the rapidity with which the coagulum would form. Upon examination of the specimen, a perfect invagination of the internal and middle coats, at the time of constriction, and a firm clot on either side of it (this specimen is represented in the accompanying cut), closing the vessel perfectly.

Operation on Carotid Artery of Sheep, in Section.

After the above operation the artery was, of course, exposed in such a way that it bled freely from both ends; the constrictor was applied to them with the effect of closing them perfectly, and the sheep was allowed to run in the yard while another sheep was operated upon; and then the animal was killed and the artery examined. It was found closed by the invaginated internal and middle coats, and a firm clot covering them (represented in cut).

Operation on Carotid Artery of Sheep in Section.

On another sheep the carotid artery was exposed and cut entirely

across. The constrictor was then applied to both ends of the vessel, with the effect of perfectly closing the vessel. The animal was killed soon after, and the arteries were found occluded by a firm clot (as represented in the cut).

CAROTID ARTERY OF A HORSE CONSTRICTED IN ITS CONTINUITY.

On the 11th of November, a large-sized horse, in good condition, was placed at my disposal by the kindness of Drs. A. Large and A. Liautard, of the New York Veterinary College, and the following operations were performed in the presence of these gentlemen: Dr. Robert F. Speir, Dr. Robinson, and a class of students. Dr. Liautard cut down upon and exposed the left carotid artery in a very skillful and careful manner. I applied the constrictor to the artery in its middle third, in its continuity—the constrictor being put upon the artery, and removed as soon as the screw could be turned to the required extent, which took only one minute and thirteen seconds.

Dr. Large examined the facial artery after the operation, and found that there was a diminution in its force, as much as could be expected considering the extent of the collateral circulation through the vertebral artery. The wound was closed by Dr. Liautard, and the horse was led to his stall. No untoward event occurred after the operation, and on the 25th the wound had entirely healed, and the animal was ready for the second operation, viz.:

CONSTRICTION OF THE CAROTID ARTERY OF A HORSE — THE ARTERY BEING CUT ENTIRELY THROUGH WITH THE KNIFE — NO HEMORRHAGE.

On the 25th of November the same horse was operated upon as follows: Dr. Liautard exposed the right common carotid for about two and a half inches in its middle third. I applied the constrictor at two points, about one inch and a half apart, and then, with the knife, divided the vessel between them. The artery immediately contracted at each end, the distal end being drawn up in the neck. The cardiac end retracted downward, but was at once projected into the wound again by the force of the heart's action, and it could be seen pulsating in keeping with the action of the heart, rising and falling one-half inch with every beat of the heart. Not one drop of blood escaped from the end of the artery. On the contrary, the cardiac extremity, which was seen beating in the wound, presented the yellowish-white color of the inner coats which were exposed by the operation. The wound was kept open and the artery exposed,

that it might be observed by a class of veterinary students; and then Dr. Liautard brought the wound together with sutures, and the horse was led to his stall, looking quite sleepy from the effects of the operation. There was no hemorrhage from the wound or the artery; and in twenty-two hours the horse died from the effect of the operation, the other carotid having been tied previously.

Dr. Liautard removed the arteries, and we examined them together.

The first specimen, from the left carotid tied in its continuity, exhibited the effect of the constrictor upon an artery when applied in its continuity, viz.: division of the internal and middle coats, with a continuous and uninjured external coat. The clots in this artery were small and easily washed out by a current of water. This operation was such as would be appropriate in the treatment of aneurism.

The second specimen — right carotid constricted in section — exhibited the effect of the constrictor upon the artery when applied to it in section, as would be appropriate in amputations. The divided artery was found separated about one and half inches; both ends were closed and occupied by a firm clot, which, with the invaginated internal and middle coats, had effected a complete occlusion. There had been no hemorrhage from either end of the artery.

Considering the large size of the carotid in the horse, I think this test may be fairly considered a very severe one. The appearance of the artery is well shown in the accompanying cut.

I am not aware of any other means by which so large a vessel could be closed so rapidly and perfectly. The advantage of leaving the wound free from foreign bodies was plainly indicated in the rapidity with which the wound healed after the first operation — a part of the wound closing by the first intention — a rare occurrence in the horse.

Amputation at the Hip — Constriction of the Femoral and Profunda Arteries.

On the evening of Saturday, October 8th, 1870, a boy was run over by a street car and taken to the Brooklyn City Hospital. Dr. Cochran, the surgeon then on duty, being sick, requested me to see the patient for him. I found the limb terribly crushed; the knee-joint was disarticulated and the soft parts of the thigh lacerated to such an extent as to allow the femur to project from the wound several inches, the leg being attached to the thigh by a band of skin and a few shreds of bruised tissue. The only chance for the boy seemed to be amputation at the hip, which I performed at once. As soon as the anterior flap was made, the femoral artery and the profunda

artery were taken up and the artery constrictor applied to them, the effect of which was to arrest the hemorrhage from these vessels entirely. They were left in this condition until the remainder of the operation — the formation of the lower flap and the disarticulation of the head of the bone — was completed, and the wound washed and ready for coaptation. All this time the ends of the arteries constricted could be seen pulsating in the wound; those present of the resident staff of the hospital and myself were satisfied with the security of the vessel. However, considering the circumstances in this case, I was not willing to trust to the constrictor, feeling that it would be injudicious to do so in the absence of any of my colleagues, and especially as I knew of the objections of Dr. George Cochran, for whom I operated, to any method of closing arteries other than by the ligature. This, added to the fact that it was an accident case which might involve litigation, induced me to finally apply ligatures and close the wound as usual in such cases. I removed a portion of the profunda artery which had been constricted, and it will be seen among the cuts. The femoral artery being short, I did not feel at liberty to remove a portion of that vessel.

AMPUTATION OF THE THIGH—CONSTRICTION OF THE FEMORAL ARTERY.

On the 8th of December, C. W., æt. fifty-four, was brought to the Brooklyn City Hospital with a compound comminuted fracture of the leg. Dr. D. E. Kissam, visiting surgeon then on duty, hoped to save the leg, and treated it with this end in view; but symptoms of gangrene appearing, it was decided to amputate at the thigh. On the 12th of December this operation was performed by Dr. Kissam amputating the thigh at its lower third, after the circular method. At the request of Dr. Kissam I closed the femoral artery with the constrictor, this vessel being the only artery exposed. The femoral vein, which bled more than usual, was also closed by the constrictor. The result gave the same satisfaction as in the other cases. The wound was then washed and left open for a few moments, to see if all was secure. Meantime the artery was seen pulsating in the wound, perfectly occluded, not a drop of blood having passed from it after its constriction. The wound was then closed by sutures after the usual manner. The condition of the patient being bad, and reaction after the operation being difficult, but little hope was entertained of his recovery, a condition of things which created considerable anxiety as to whether this might not be too severe a test for the constricted artery. Finally gangrene set in in the stump, notwithstanding which, and the "open"

condition of the wound which followed such a condition, there was no hemorrhage. The patient died three days and sixteen hours after the amputation.

The artery was removed from the stump, and it was found perfectly closed by the invaginated internal and middle coats, and a firm clot, as represented in (Fig. 7).

In 1793, Deschamp invented his instrument for the immediate compression of arteries, "by which the artery was to be compressed against a horizontal bar by the tightening of a ligature, the ends of which were passed through openings in the bar, and secured at the top of a vertical stem of the instrument." Since this time there have been many attempts to produce a reliable substitute for the ligature. In the present paper it is not intended to enumerate these methods, but it may be stated that they have nearly all been based upon principles which depend for their success upon a force applied to the artery for a considerable period of time, and requiring to be withdrawn subsequently. One of the methods noticed in this paper — torsion — is an exception to this statement. Webber's intracisor and antiligature forceps are also exceptions to this statement. Whether or not there are others I am not aware; certainly none have been presented to at all compare with torsion in this respect.

The fact that such efforts have been made to secure the advantages of the ligature without any of its disadvantages, shows plainly that the minds of practical surgeons have long been impressed with the possibility of closing arteries by some method better than the ligature. Certainly no unprejudiced surgeon would deny that the ligature often interferes greatly with the healing of wounds, maintains suppuration by acting the part of a seton, increases the chances of pyæmia, and sometimes causes secondary hemorrhage.

The primary effect of the ligature is so satisfactory, and it appeals to one's sense of present security to such a degree, that we are very likely to overlook the accidents which sometimes follow as the direct consequence of its use, but which are often attributed to other causes. The surgeon is not likely to feel any great responsibility rest upon him should a patient upon whom he had operated die of pyæmia or secondary hemorrhage after the amputation of a limb, although it might be traced directly to the use of the ligature.

The same surgeon would view his responsibility in a very different aspect should he find that by the employment of some other means of closing the vessels secondary hemorrhage followed.

Secondary hemorrhage following, with equal frequency, the use of

any other method of closing vessels would be considered sufficient ground for its rejection. Doubtless it is for this reason that many of the methods which have been presented to the profession for trial have failed to sustain themselves as reliable methods, and it is probable that many or most of them were worthy of a better fate than that which befel them. Acupressure and torsion can scarcely meet with the same fate, and they will probably be supported, notwithstanding the objections to them, whether better means are offered or not.

We have now learned that it requires but very little force to effect the closure of arteries. The satisfactory results sometimes obtained by the use of acupressure and torsion have taught us that the perfect occlusion of arteries may be effected by a less degree of force than was formerly supposed to be necessary.

In view of these considerations it seems unreasonable to cling to the ligature with prejudiced tenacity; and those objections which are common to the ligature, and other methods also, ought not to be used exclusively to suppress the claims of the rival method, but ought also, to be placed to the account of the ligature.

The peculiar effect of the *artery constrictor* upon the coats of the artery, rupturing and invaginating the internal and middle coats, while it preserves the integrity of the external coat, appears to offer a more substantial ground for confidence than any method based merely upon pressure or an internal coagulum. This, added to the fact that the instrument is instantly withdrawn from the vessel, seems to offer all the advantages which can be expected of any method.

The advantage which the artery constrictor offers for fulfilling the indications necessary for the union of wounds by the first intention, will be seen when it is noticed that absolutely nothing is left in the wound to act as a foreign body; although probably the same apparent objection will be raised against the artery constrictor which has been offered against the operation of torsion, viz.: that the bruised end of the artery acts as a foreign substance in the wound, and must be removed by suppuration.

It seems to me that those who have raised this objection to the use of torsion must have had very little experience with it, or else have performed the operation very carelessly or imperfectly. From my own observation of the effects of torsion, and from a considerable experience in the crushing of tissues by the écraseur, I have concluded that the effect of torsion, or of crushing the extremity of the artery, even to a considerable extent, provided it be done rapidly, is not incompatible with the union of wounds by the first intention. In order

for the crushed portion of an artery, or other tissues left in a wound, to become a slough, or to act as a foreign body, it is necessary that the pressure should be continued until sloughing or inflammation begins, or else that the portion crushed be separated from contact with the other living tissues, and exposed to the influence of atmospheric air or other deleterious influences, as inflammation, etc.

None of these conditions are present in the case of operations as usually performed, for the wound is brought together immediately, and any lost vitality is restored by the close contact with the living tissues and the blood. Besides, the greatest pressure made by the artery constrictor is not sufficient to injure the external coat of the vessel. The moment the internal and middle coats give way, the pressure upon the external coat is very slight, on account of the groove in the tongue of the instrument, made on purpose to receive the external coat and protect it from injury. Therefore this objection to the operation of torsion, even if it held good, could not be raised against the artery constrictor.

This leads me to mention one of the chief advantages of the artery constrictor over the ligature and acupressure, viz.:—That provision which it promises for the prevention of secondary hemorrhage. When the ligature is used a sinus is formed along the track of the ligature, leading directly to the end of the vessel; and in case of accident to the artery from a too speedy separation of the ligature, or from a failure of the internal coagulum to form, or other cause producing secondary hemorrhage, the blood finds a free and tempting outlet through the sinus or opening thus provided.

So also with acupressure, the needle being left in the wound acts temporarily as a foreign body, and also creates a sinus leading to the artery; and in case of the failure of the internal coagulum to form, or on account of the breaking down of the clot from a granular degeneration, or in case of a failure of the wound to unite by the first intention there is always more or less danger of secondary hemorrhage following the withdrawal of the needles when any of the above circumstances occur.

With the artery constrictor, on the contrary, hemorrhage is rendered impossible, under any of these conditions, from the fact that invagination of the internal and middle coats forms a valve-like projection in the interior of the vessel, which is of itself sufficient to protect the artery from hemorrhage.

I desire now to present the artery constrictor to the profession for trial. I am confident that some such method will eventually displace

the ligature; if this be not the method, it must be acknowledged that the principles upon which it is based are those which must finally succeed. It may be that the experiments which I have thus far been able to make upon the living human arteries of large size, are not sufficient to inspire those not interested in the success of the instrument with confidence enough to employ it in capital operations. I trust, however, that any necessary proof of its merits may soon be forthcoming. To my own mind the experiments upon the arteries of the horse have covered the whole ground, the first operation proving the possibility of rupturing the internal and middle coats of the artery without injuring the external coat; the second operation proving the possibility of closing a very large artery, in section, without leaving any substance attached to the artery or in the wound. All the other questions connected with the occlusion of arteries have been proved over and over again by the advocates of other methods and by pathological investigations.

In the meantime there can be no objection to the use of the instrument in a multitude of cases where the arteries are not of large size, and where there is never any danger in the use of even the most crude efforts to arrest hemorrhage.

The artery constrictor will often be found useful to control the bleeding in amputation of the breast, and in other operations where it is desirable to secure union by the first intention, and yet where the arteries are not of such a size as to create any fear of failure.

If the surgeon has not sufficient confidence in the instrument for this, then I may venture to recommend it as an aid to the performance of operations in general, where it is desirable to keep the wound free from blood after the first incision is made, and yet where the ligature or acupressure needle would be in the way of the operator, and also require subsequent removal. In such cases there can be no danger, and often a great advantage gained by applying the constrictor to the arteries as fast as they are cut; the operation may then go on with one of the most disagreeable accompaniments of larger operations overcome, that is, the presence of blood in the wound. For this purpose a small pocket case constrictor is to be used. In such instances it may supply the place of torsion, than which it is more easily and effectually applied.

The artery constrictor offers encouragement for its trial in operations to produce the occlusion of arteries in cases of aneurism. In this use the constrictor is to be applied to the artery in its continuity, the internal and middle coats being ruptured and invaginated on either

side of the instrument, and the external coat is left as a connecting band to the vessel, preserving its continuity.

The great advantage to be gained in the use of the constrictor in aneurism being the possibility of obtaining union by the first intention, the wound being brought together immediately after the operation, and as the constrictor is always to be withdrawn as soon as it has made its impression upon the artery, there is nothing left around the artery or in the wound to act as a foreign body.

The artery constrictor may be found useful also in cutting off the vascular supply of large tumors, in which case it should be applied in the continuity of the vessels in the same manner as directed for aneurism.

In the operation of ovariotomy it is very desirable to have some simple means of arresting the flow of blood from the small vessels which are opened during the breaking up of adhesions, etc. Inasmuch as the constrictor acts equally as well upon small as upon large arteries, the same advantage may be gained by its use in this operation as in those already mentioned, the abdomen being left free from ligature or other foreign substances usually found necessary.

In the application of the constrictor for the closure of large vessels after amputation, etc., there need be no fears entertained of immediate hemorrhage, because the usual pressure which is made upon the artery above the points of operation (by the tourniquet or otherwise) is always sufficient to arrest the flow of blood into the extremity of the artery and cause the formation of a clot. This pressure is usually made for safety and convenience' sake; but should it be made designedly for the object of obtaining a clot in the artery, of course the effect would be more perfect.

DIRECTIONS FOR THE APPLICATION OF THE ARTERY CONSTRICTOR. (See Figs. 8, 9, 10.)

The application of the constrictor is very simple. The artery is to be caught up by a tenaculum or a pair of forceps (which answers better), and the tongue of the constrictor placed around the vessel; the tongue is then drawn tightly upon the artery by means of the vise arrangement at the upper end of the instrument. As soon as the screw turns with a considerable degree of resistance, or the internal and middle coats are seen to be invaginated, by noticing their movements in the end of the artery, the instrument is to be detached from the artery and the operation is completed.

In large arteries the tongue of the constrictor must be drawn into

the sheath further than is necessary for small arteries. This is the one point which it is necessary to attend to in the closure of large arteries; there can be no harm done to the vessel by being drawn well into the tube, and a thorough invagination secured. The invagination of the internal and middle coats may be made as thorough as it is desired, by drawing the artery into the tube as far as needed to effect the object. Some of the instruments have been made with stops, to indicate when a proper invagination was reached; but by further experience it was found that the touch was the best guide for the operator. By a continued traction upon the external coat of an artery, after the invagination is once commenced, the internal and middle coats may be peeled up and pushed entirely out of the external coat, and this latter coat be drawn out through the sheath, entirely freed from its inner coat, so that the operator has it in his power to produce an invagination to any desired extent.

It is well always to permit the blood to flow into the artery (if it has been controled by tourniquet or otherwise during the operation), before removing the constrictor; this secures a perfect clot upon the invaginated coats, which can hardly be displaced afterwards.

For convenience sake the constrictor may be made with three sizes of tongues, to be used with one tube, so as to be useful in any sized artery.

A pocket case constrictor is also made to be used as a substitute for the torsion forceps, than which it is more easily and effectually applied.

PLATE I.

Fig. 1.

Fig. 1 shows a form of artery constrictor for general use. The grooved form of the tongue is not as well shown as it may be seen on the instrument. The drawing has been made to represent the straight form; it may be made curved on the end, however, to adapt it to the situation of the artery to be constricted.

PLATE II.

FIG. 1.

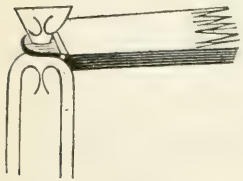


FIG. 2.

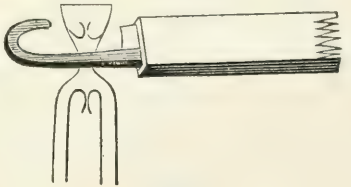


FIG. 3.

Fig. 1 shows the mode of applying the artery constrictor; first step in the operation.
Fig. 2 shows second step; drawing of the tongue upon the vessel, rupture and invagination of the internal and middle coats.
Fig. 3 shows third step; withdrawal of the instrument, leaving the artery occulated by the invagination of the internal and middle coats.

PLATE III.

FIG. 1.

FIG. 2.

Operation on section of an artery.

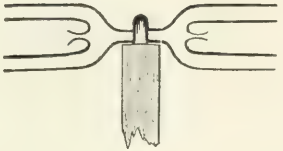


FIG. 3.

FIG. 4.

Operation in continuity of an artery.

Fig. 1 shows the primary effect upon the artery, viz.: rupture and invagination of internal and middle coats.
Fig. 2 shows the secondary effect upon the artery, viz.: the formation of the internal coagulum.
Fig. 3 shows the operation of the constrictor in the continuity of vessels, as for aneurism, showing the primary effect.
Fig. 4 shows the secondary effect of the operation in continuity, viz.: internal coagulum.

PLATE IV.

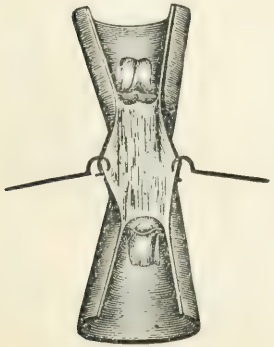


FIG. 1.

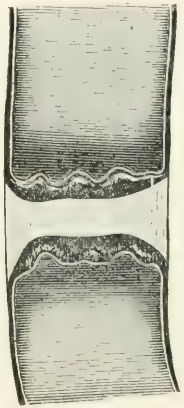


FIG. 2.

FIG. 3.

FIG. 4

Fig. 1 shows an artery constricted and cut open, lengthwise; the invagination after the rupture of the internal and middle coats is well shown, and also the integrity of the external coat.

Fig. 2 shows another artery, completely laid open, showing the divided and retracted internal and middle coats, with a perfectly preserved and entire external coat behind them.

Fig. 3 shows an artery constricted and laid open, showing the constriction and invagination of the internal and middle coats.

Fig. 4, a close section of a constricted artery, showing the invaginated internal and middle coats.

PLATE V.

Fig. 1.

Fig. 2.

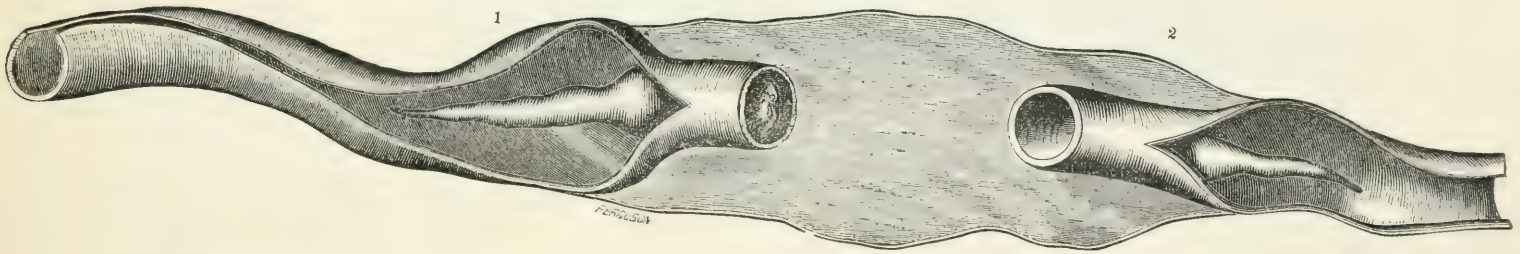
Fig. 3.

Fig. 4.

Fig. 5.

Fig. 1. Carotid artery of a sheep constricted in section, showing the internal coagulum.
Fig. 2. Carotid artery of sheep constricted in its continuity, showing the invagination of the internal and middle coats and internal coagulum.
Fig. 3. Profunda femoris artery of a boy constricted (in amputation at hip); shows the constriction and internal coagulum.
Fig. 4. Carotid artery of sheep constricted in section; shows clot and invagination of the internal and middle coats.
Fig. 5. Carotid artery of sheep; shows constriction and internal coagulum.

PLATE VI.



This drawing represents the life size of the carotid artery of a horse, closed by the constrictor. It shows the internal coagulum formed on the invaginated internal and middle coats at the cardiac and distal extremities (1, cardiac extremity; 2, distal extremity). The clot formed on the distal side is not so large, and does not come so far toward the end of the artery, showing the perfect obstruction by invagination.

PLATE VII.

Fig. 1.

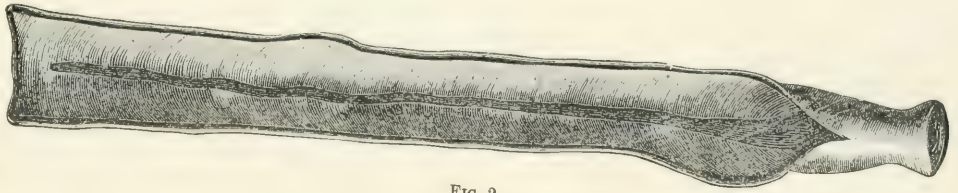


Fig. 2.

Fig. 1 represents the abdominal aorta of a dog, tied by the constrictor.

Fig. 2 shows the femoral artery of a man, tied by the constrictor, in a case of amputation at the thigh. It shows at the end the invaginated internal and middle coats, and the constriction. A very long coagulum is shown occluding the artery.

PLATE VIII.

LIGATURE.

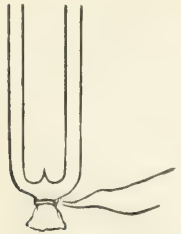


FIG. 1.

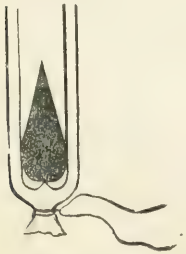


FIG. 2.

ACUPRESSURE.

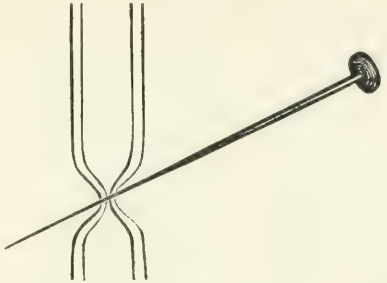


FIG. 3.

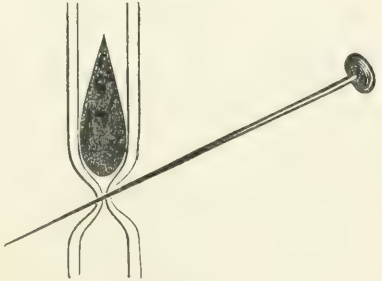


FIG. 4.

ARTERY CONSTRICTOR.

FIG. 5.

FIG. 6.

Fig. 1 represents the primary effect upon an artery, by the ligature.
Fig. 2 shows secondary effect, internal coagulum.
Fig. 3, primary effect of acupressure.
Fig. 4, secondary effect of acupressure, formation of internal coagulum.

Fig. 5, primary effect of the artery constrictor, viz.: rupture and invagination of the internal and middle coats.

Fig. 6, secondary effect of the artery constrictor; formation of internal coagulum upon the invaginated internal and middle coats.

ARTICLE XXII.

Statistical Report of 494 Cases of Diseases of the Ear. By D. B. St. John Roosa, M. D., Clinical Professor of the Diseases of the Eye and Ear in the University of New York, Surgeon to the Manhattan and Brooklyn Eye and Ear Hospitals.

Some months since I presented to the profession at a meeting of the New York Academy of Medicine, and in the *New York Medical Journal** the statistics of 500 cases of aural disease observed in private practice. Since that time, I have had the opportunity of observing and treating about the same number, under the same circumstances, besides a much larger number at the Brooklyn and the Manhattan Eye and Ear hospitals.

In view of the skepticism existing even in the highest ranks of the profession, as to the necessity of treating diseases of the ear, I believe I can do no better service to the cause of truth, than that rendered by the presentation of such unadorned facts as are contained in a careful, although necessarily superficial, report of a number of affections of the organ of hearing, as they were seen in private practice in a period of twenty-eight consecutive months.

As evidence of the skeptical state of the profession in regard to aural therapeutics, I may name one of the Boylston prize questions for 1870—"Criticisms on the recent opinion of a medical writer, that the less serious diseases of the ear may be successfully treated by a well-qualified general practitioner, and the more serious affections by none." I may also mention the fact that distinguished practitioners have, even within a few months, seriously advised patients to stop a course of treatment for suppuration in the ears, on the general ground that it was not best to "meddle with the ear," and this without any examination of the cases, and with an expressed confidence in the practitioner who had charge of them.

The cases herewith presented were taken from my note book without selection, as they occurred. Those only are classified as "cured," in which the hearing was restored to a normal condition as tested by the watch, the tuning-fork, and ordinary conversation; and when the membrana tympani, if previously ulcerated, has been healed. Judged by the ordinary use of the term *cured*, this standard is too high. It

* Vol. ix, No. 5.

is higher, for example, than that in ophthalmic practice, where the removal of a cataractous lens, so that the patient gets sight enough to read coarse print, is called a cure of the cataract, although the vision obtained may be only two-thirds of that enjoyed by a person who has never had cataract. In the same manner we speak of *curing* a bone affected with necrosis, by removing the diseased portion, even if considerable deformity be left. If a patient who has suffered for years from an ulcerative process in the cavity of the tympanum, recovers to such an extent that the ulcer is healed, and the hearing power improved, he would be said to be cured, under a standard no higher than that usually adopted in medical statistics, but I have preferred in this table, and in the one previously presented, to put them under the head of "much improved."

A large proportion of the 494 cases are classified as "unknown." This term means that these were either cases of persons coming from a distance, who were unable to return after the consultation, or cases which I saw in consultation with other practitioners, from whom I have never heard the result of the treatment agreed upon. Some of these, at least, were undoubtedly cured or improved, or I should have heard from them again.

Those cases classified as "unimproved" embrace not only such as were not benefited after some treatment more or less thorough, but also such as were pronounced entirely unworthy of treatment, as being hopeless; for instance, cases as incurable as complete leucoma of the cornea, or advanced atrophy of the optic nerve.

There were fourteen cases of furuncular or circumscribed inflammation of the external auditory canal; eight were cured, two were much improved when last seen, and four were seen but once.

The treatment consisted of a free incision, the use of warm water through Clarke's ear douche, and the administration of iron and quinine when there was some general debility, as there often was.

Of diffuse suppurative inflammation of the external auditory canal, the so-called "otorrhœa externa" there were only six cases. Three of these were cured; two were much improved; while the result in one case is unknown to me. I am inclined to think that it is a fact not generally appreciated, that in the most cases of chronic suppuration in the ear, the primary seat of the disease is the cavity of the tympanum, and not the external auditory canal. One of the three cases that were cured was that of a young lady, who had suffered from a "discharge from the ear," for some two years. Her hearing was so much impaired that she could not hear ordinary con-

versation; there was an offensive and profuse discharge from the auditory canals and outer surface of membranal tympani, and her general condition was much affected in consequence of the depression of spirits induced by her disease. She had been frequently, and in some instances persistently, prescribed for, but she never had been *treated;* that is to say, her physicians had been content with advising the use of a syringe and astringents, alteratives, and counter-irritants, while they had never given their personal attention to the cleansing of the ears, and the application of the appropriate agents to the diseased integument of the external auditory canal, and outer surface of the membrana tympani.

Now I hold that it is just as impossible for a patient to cleanse his own ear, if there be much suppurative inflammation affecting it, as to cauterize his own palpebral conjunctiva, and I feel persuaded that many of the failures to check and cure an ulceration of the ear result from the want of the personal care of the attendant, who has prescribed the proper means of treatment, but who has been content with *ordering*, what he should have *done.*

The treatment employed in these cases was simply the daily cleansing of the parts by means of a syringe and warm water, cotton on an appropriate holder, a camel's hair brush or the like, with the subsequent application of weak astringents in weak solutions, such as the sulphate of zinc, or the nitrate of silver, in a solution of the strength of forty grains to the ounce. This latter application was made with a cotton-holder, but it was not poured in the ear, as were the weaker solutions of zinc and alum. During the cleansing process the ear was frequently examined by means of Troltsch's method, that is the use of the concave mirror, and ordinary daylight.

There were three cases of eczema of the auricle and auditory canal, all of which were cured by a method of treatment similar to that just detailed.

There were four cases in which the microscope showed that the vegetable fungus, known as aspergillus, was growing in the external auditory canal, and on the surface of the membrana tympani.

Since the publication of Schwartze's* case, and Wreden's brochure, containing a number of cases, it has been found that many obstinate cases of what were formerly supposed to be instances of diffuse inflammation of the external auditory canal, or of impacted cerumen, were really caused by the growth of this fungus. It may be considered as a kind of mould that forms on damp walls, and in other

* Archiv. für Ohrenheilkunde, Bd. 2, p. 5.

moist places, and which may enter the ear, especially if the ground be prepared for it by a precedent inflammation, that has abraded the integument.

The pain, vertigo, and tinnitus aurium, produced by the growth of this fungus, are very considerable; but these symptoms are the same as those in several other affections of the ear. The microscope is, therefore, the only means of positively determining the exact nature of the affection, although the objective appearances to the naked eye will assist very much in the diagnosis. In a communication which appeared in the *American Journal of the Medical Sciences* (January, 1870), by Dr. William B. Lewis and myself, a full account of two of the cases embraced in this table, is published with drawings by Dr. Lewis, of the microscopical appearances.

The treatment of this affection is very simple; but it is apt to be tedious. The fungus should be thoroughly removed by the forceps used under a good illumination as fast as it is produced; after this, the part should be kept clean by the frequent use of the syringe and warm water, which latter agent I have found quite as useful as to the so-called parasiticides.

There were thirty cases of inspissated cerumen, all of which were cured by the removal of the hardened secretion, by means of the syringe and warm water. Impacted wax often occurs, as we all know, in connection with chronic inflammation of the mucous membrane lining the cavity of the tympanum, if not in consequence of it, but in such cases, it is merely a symptom, and not a disease. When hardened wax is removed from such ears, the patients experience scarcely any benefit. The same negative effect is produced by the removal of hardened wax from the remains of an ulcerated membrana tympani. I have, therefore, omitted these cases in the classification, and have classed together the true, uncomplicated cases.

One of these cases was somewhat remarkable, from the fact that the hardened secretion had remained in the ear, and very much impaired the hearing for six years.

There was one case in which I was called to remove a foreign body from the auditory canal, which was not to be found. The mother stated positively that the child had placed a carob bean (Johannis-brod) in the ear, and the physician who asked my aid, assured me that he could see it and feel it, and that he had made several attempts to remove it, one while the child was under the influence of chloroform, but without success. The child was so much frightened by the previous attempts at the removal of the supposed

foreign body, that I was unable to make a thorough examination until the child was anæsthetized, when I satisfied my colleague and myself that there was no foreign body in the ear, and that what had been supposed to be so was a projection of the bony auditory canal. The patient, being let alone, did well, and the ulceration in the membrana tympani, caused by the manipulations, was completely checked.

There were two cases in which bodies in the external auditory canal were promptly removed by the use of the syringe and warm water.

There were twelve cases of acute catarrh of the middle ear, affecting one side, attended by the usual symptoms, redness of the membrana tympani, pharyngitis, impairment of hearing, severe pain, tinnitus, and a sense of fullness in the ear. The treatment consisted in the use of leeches, warm water in the auditory canal, gargles, diaphoretics, and opium. In two cases, paracentesis of the membrana tympani was performed with marked and instantaneous benefit.

Eleven cases were cured, and one died, from the extension of the affection to the meninges of the brain, probably through the mastoid process. This case has already been reported.* The membrana tympani did not suppurate, but the affection localized itself in the mastoid portion of the middle ear. Trephining of this process was resorted to, but the patient died in a comatose condition.

There were thirteen cases of acute catarrh of the middle ear, occurring on both sides. Ten of these were cured, while the result of the treatment advised is unknown to me in the three remaining cases.

Two of these inflammations were caused by the use of the so-called Thudichum's nasal douche, for the relief of naso-pharyngeal catarrh. I do not now prescribe the use of this instrument, unless with the greatest circumspection, and after having fully explained the danger connected with its use. The danger is probably from the entrance of fluid through the Eustachian tubes into the cavity of the tympanum and mastoid cells. One such accident will not usually produce more than momentary uneasiness, but a repetition of it, even if the water be warm, is not without danger. I have observed two cases where the appliance, used under my own direction, has induced suppuration of the drum membrane. I have also seen several other cases,† some of which were reported by Dr. C. I. Pardee, in which

*Medical Record, Dec. 1, 1870. Transactions American Olotological Society, third year.

†Medical Record, Vol. 4, p. 530.

acute inflammation of the middle ear was caused by the use of the douche. In one case, elsewhere reported in full,* pyæmia resulted from the aural suppuration, and the patient nearly lost his life. I now rely upon the posterior nares syringe, a nebulizer, and gargles, for the purpose of cleansing and medicating the posterior nares.

In all these cases of inflammation of the middle ear, the Eustachian catheter, and Politzer's method of inflating the membrana tympani, were employed as soon as the very acute symptoms had been subdued. Without these methods of restoring the communication between the pharynx and the middle ear, the hearing power of the patients would, I think, have remained permanently impaired. They would, probably, have passed over into that class of cases already so disproportionately large, placed under the head of "chronic aural catarrh."

Of the whole number of cases in this table, 269, or a little more than fifty per cent, were diagnosticated as chronic inflammation of the mucous membrane lining the middle ear. This general heading includes all varieties of this affection. Some of them were cases where the inflammation was chiefly seated in the Eustachian tube, the "tubal catarrh" of many writers, as well as those hopeless ones in which the abnormal appearances on the membrana tympani, and in the pharynx, were so little pronounced, that, under our old ideas, they would have been classified as cases of "nervous deafness," but cases in which the tuning fork enables use to exclude the labyrinth from being the primary seat of the disease. In fact, the classification is much too general, but it is as complete as the notes taken amidst the demands of practice will allow. The results of the treatment are not flattering. They read like those of phthisis pulmonalis. Their publication will do good, however, if they serve to convince us that inflammations of the middle ear must be treated in their incipiency, if we desire good results.

The fact that the statistics are not as favorable as those of Schwartze, of Halle, in Germany, who is in the habit of publishing statistical tables such as mine, I cannot fully explain. A German practitioner in New York, who has seen much of aural disease, both in Germany and America, informs me that he considers chronic aural catarrh more intractable with us than in his native country.

Nearly all of these 269 cases had been affected for years, and most of them had never been treated in any efficient local manner. The causes of many of them may be found in the neglected "earaches"

*Archives of Ophthalmology and Otology, No. I.

of childhood, or in the coryzas of more mature years, while a few seemed to have no apparent cause; and having once begun, advanced insidiously, but steadily, to pathological changes, which rendered all hopes of recovering the hearing futile.

The number of these cases will undoubtedly be lessened in the next generation, now that a suppurating membrana tympani, and one of the greatest tortures that can be experienced, a pain in the ear, are being thought worthy of prompt attention.

The results of these cases were that twelve were cured, thirty-two were much improved, fifty-five were improved, seventy-five were unimproved, and ninety-five were seen but once.

The treatment employed was chiefly local, and consisted in the use of gargles, of the Eustachian catheter, through which air, vapor of water and of iodine, solutions of sulphate of zinc and alum, were passed. Politzer's method with the bulb attachment, in which various vapors were generated, *e. g.* chloroform and tincture of iodine, as well as applications to the mouths of the Eustachian tubes and posterior pharyngeal space were also employed. The general condition was always carefully considered, and attempts were made when necessary to bring the patient into the most favorable sanitary conditions.

There were seventeen cases of acute suppuration in the middle ear: fifteen affected one ear only; eight of these were cured; five were improved; and in four cases the result is unknown to me. In one instance there was periostitis of the mastoid, and several free incisions down to the bone (Wilde) were required, to prevent the advance of the inflammation to the meninges of the brain.

There were ninety-three cases of chronic suppuration in the middle ear. The most of these were of years' standing, and the result of naso-pharyngeal inflammation occurring during scarlet fever or measles. My experience leads me to the belief that physicians would prevent the occurrence of many of these cases, by devoting a little of the time urgently demanded by the general symptoms, to the condition of the ear. If means were promptly taken to quiet an "earache" by the instillation of warm water, or the application of leeches, and if an ulcerative process was at once checked by thorough cleaning of the auditory canal and cavity of the tympanum, with the subsequent use of a weak astringent solution, many of the deplorable consequences classed under the head of "otorrhœa" could be prevented.

Six of these cases of chronic ulceration were cured; twenty-seven

were much improved (perhaps some of the subjects considered themselves cured, since the ulceration was stopped, and the hearing much improved). In twenty-six cases there was improvement, seven were unimproved, and twenty-seven were seen but once.

Polypi were removed in some of the cases, either by Wilde's snare or Hinton's forceps.

Thirteen were cases of primary disease of the labyrinth as shown by the tuning fork. Among the patients affected with chronic aural catarrh, there were some in whom the labyrinth was involved, but secondarily; ten were considered as hopeless cases, and were not treated. In three some encouragement was given, but the patients were not treated.

There were fourteen deaf-mutes, chiefly from affection of the middle ear, occurring at so early a period that speech could not be acquired by imitation.

There were three cases of sounds in the ear, without impairment of structure or function, as far as could be determined. One was an objective sound, being heard by myself as well as the patient, as a crackling noise, seeming to come from the mouth of the Eustachian tube, and to be due to abnormal muscular action. I am sorry to say that I saw this case but once, and then for a very short time.

Four hundred and ninety-four cases of Diseases of the Ear seen in private practice.

EXTERNAL EAR.	Cured.	Much improved.	Improved.	Unimproved.	Unknown.	Died.	Total.
Furuncular inflammation; external auditory canal	8	2	..	..	4	..	14
Diffuse inflammation	3	2	..	1	..	..	6
Eczema	3	..	..	..	..	..	3
Aspergillus	3	1	..	..	..	..	4
Inspissated cerumen	30	..	..	..	..	..	30
Supposed foreign body	1	..	..	..	..	..	1
Foreign body	2	..	..	..	..	..	2
MIDDLE EAR.							
Acute catarrh, one side	11	..	..	..	..	1	12
both sides	10	..	..	..	3	..	13
Chronic catarrh, one side	2	3	5	2	3	..	15
both sides	10	29	50	73	92	..	254
Acute suppuration, one side	7	..	3	..	5	..	15
both sides	1	1	..	..	..	..	2
Chronic suppuration, one side	4	12	13	..	11	..	40
both sides	2	15	13	7	16	..	53
INTERNAL EAR.							
Primary disease labyrinth, one side	..	..	..	7	2	..	9
both sides	..	..	..	3	1	..	4
Deaf-mutes	..	..	..	14	..	..	14
Tinnitus aurium; cause unknown	..	..	..	3	..	..	3
	97	65	84	110	137	1	494

ARTICLE XXIII.

Vertebrated Probe and Catheter. By Lewis A. Sayre, M. D., Professor of Orthopedic and Clinical Surgery, Bellevue Hospital Medical College, New York.

The difficulty of exploring deep and tortuous sinuses, in cases of caries and necrosis, with the ordinary probes found in our pocket cases, must have been noticed by all engaged in the practice of surgery. They are so stiff and unyielding, that they cannot be made to follow a devious or tortuous channel, and the effort to make them trace it, is often followed by great pain, and more or less hemorrhage.

To avoid this difficulty, I have for many years past used a very small probe of *pure silver*, with a large bulbous extremity. This being very flexible, could be inserted without pain; but it would sometimes double on itself, and was, therefore, unreliable. To obviate this difficulty I have devised the present probe, which was made by Mr. Stohlmann, of the firm of Tieman & Co., No. 67 Chatham street. It consists simply of a series of hollow silver disks, made a trifle smaller at one end than at the other, so as to fit into one another like a pile of cups or tumblers. These are held together by a linked chain running through the series, and jointed nearly opposite each disk insertion. This chain terminates in a square rod, which runs through the last disk, and is much larger than any of the others, and on the end of the small rod is cut a thread, on which runs a small button-screw, which can make the chain tight or loose at pleasure. Of course when the screw is turned back, the chain being lengthened, the disks fall away from each other, and the probe is as limber as a chain, capable of following any sinuosity into which it may be pushed. By a few turns of the screw, the chain being shortened, the disks are drawn firmly together, so as to make a *solid* probe, which will give the concussion against carious or necrosed bone, the same as any other probe. A small slot is made in the cannula containing the screw, for the purpose of putting a small nut, which regulates the tension of the chain, and thus prevents any possibility of applying sufficient force to break it. There are two fenestræ in the distal disk, for the purpose of drawing an oakum seton through deep sinuses and carious joints. This makes it also very useful as a catheter, in cases of tortuous urethras from enlarged prostate. It is impossible to make a false passage with it; and, as it is simply a series of ball and socket,

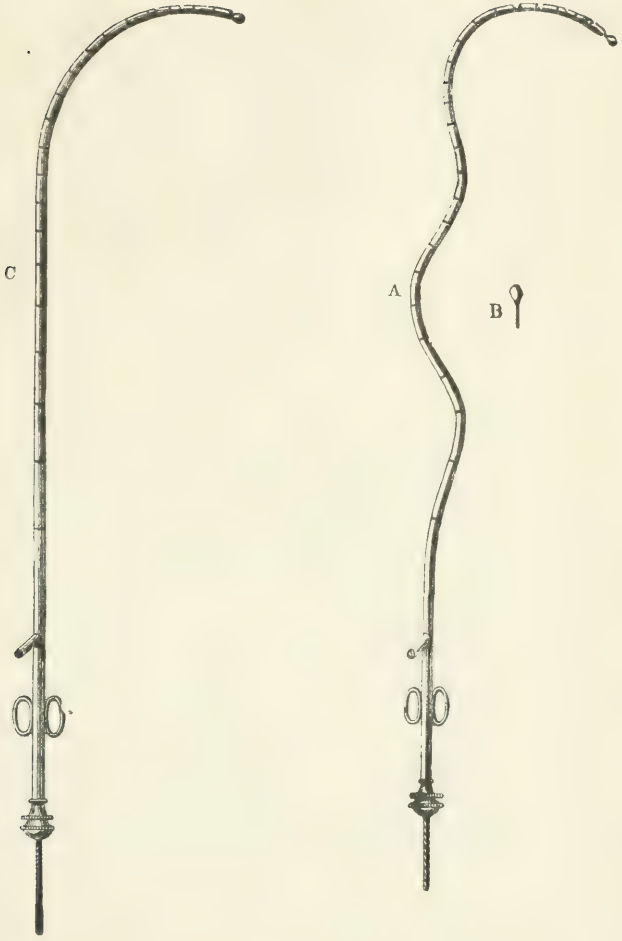
or universal joints: it will follow any passage, however devious. By simply unscrewing the steel bulb at the end, and inserting a bulb of porcelain, B, according to the suggestion of Nélaton, you have the most perfect bullet-probe that can be desired. Of course, like all other probes, this one requires to be made of different lengths and sizes.

To clean it, it is necessary to unscrew it at the end, and to remove the small screw at the slot in the cannula, when it will immediately fall to pieces.

After washing, it is easily put together, just the same as a string of beads, only remembering to put the small end of the disk on the wire first: and, as each disk increases in length until the end, of course no error can occur in making them fit properly. The cuts, together with this description, I think, will make it sufficiently plain.

I have tested this probe in several cases of deep and tortuous sinuses connected with dead bone, where all other means of exploration had failed to reach the bone, and in each instance with perfect success.*

* Since the above was in type, I have, by the suggestion of my friend, Dr. Winslow Lewis, of Boston, added to it a button-slide, similar to "Simpson's Sound," and thus made it a most useful "uterine sound," in all cases of flexion.


C
A
B

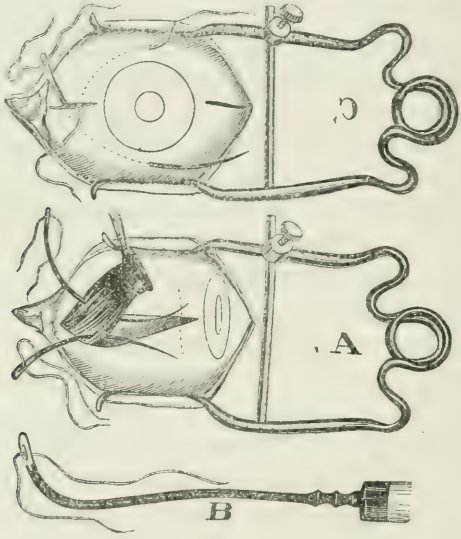
ARTICLE XXIV.

A contribution to the Surgery of Divergent Squint. By C. R. Agnew, M. D., New York.

We are commonly asked to operate in cases of divergent squint, either to remove the deformity or relieve the dragging pain and weariness, which the loss of muscular co-ordination seems to induce. While we may certainly remove the deformity and the asthenopia, we must not expect, in the majority of cases, to restore binocular vision. The danger from inflammation is slight if the surgeon is gentle in his manipulations, and handles the parts involved with due skill. We must first determine, in a given case, whether the divergence can be corrected by a contemporaneous tenotomy of both external recti muscles, without an advancement of one or both internal recti. When an externus is successfully cut, it slips backward and adheres to the sclerotic at a point posterior to its natural insertion, and this practically increases the adductive power of the internus. Such a procedure may be successful in cases of weakness of the interni, in which the sharpness of vision in both eyes is nearly the same, but it cannot be depended upon in cases of divergent squint resulting from a tenotomy of one or both interni for previous convergent squint, nor in any case in which binocular vision has been long disturbed, and in which there is a permanent and visible divergence, however small. In such cases the faulty internus must be shortened or its line of insertion planted in the sclerotic, as close to the corneal edge as practicable and additional adductive power also given by tenotomy of the opposing externi. We will, after these few preliminary remarks, describe a method of operating which may be made to meet any or all of the indications, and the performance of which does not involve extraordinary skill, or subject the eye to the danger of grave inflammation.

The method illustrated by the cuts A, B, and C, is one in which the internus is detached from its sclerotic insertion, drawn forward, shortened and made to adhere again to the sclerotic, without attempting to lift and advance the overlying conjunctiva and capsule of Tenon. The patient having been profoundly etherized, and the eye to be operated upon held open by means of a spring speculum, an incision is made from the nasal end of the horizontal meridian of the cornea, back through the semilunar fold to the caruncle. This incision is best made with scissors, and should be carried down through the

conjunctiva and capsule of Tenon upon the internus midway between its borders. The externus of the same eye should now be divided, access being made to its insertion through a conjunctival wound tangent to the cornea, as in cut C. This can be easily done without cutting off, in any degree, the nutrition of the cornea, as is the case where the wound is made parallel to the corneal border. The next step is to get control of the internus so that it can be easily handled. This is accomplished, not by forceps, but by using a strabismus hook as figured in B. The free end of the hook, drilled with an eye and

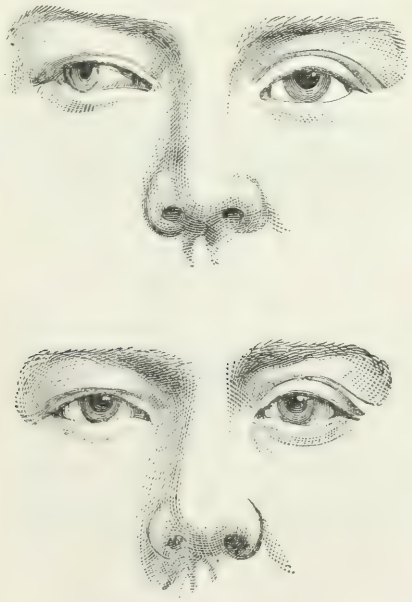


armed with a waxed ligature, is made to pass as one would pass an ordinary hook beneath the tendon, going so far back as to secure any adventitious bands. As the hook is withdrawn, the ligature is left in place, and the tendon, at its sclerotic insertion, firmly tied. With scissors, the tendon is then detached from the sclerotic and drawn out of the wound as delineated in cut A. Two sutures for the advancement of the muscle are then placed, as in cut A, by curved needles, handled by some convenient needle-holder, like that of Prof. Sands. The sutures, well waxed, should transfix the muscle at as great a distance from the end of the tendon, as the degree of the divergence would seem to require. It is difficult to make an inflexible rule for this, but we have commonly found that the distance should be about one-fourth greater than the linear measurement of the divergence, except in cases where said divergence exceeds four lines, in which event, the needles should transfix the muscle as far back as the carun-

cle will allow. The sutures having been placed in the muscle, the next step is to carry them beneath the conjunctiva, and, if possible, beneath the capsule of Tenon, and out above and below the cornea at the termini of its vertical meridian. Cut C, shows the needle in the course of the lower suture, and the upper suture in place. It now remains to cut off the end of the tendon, as held in the ligature, leaving a line or two of muscular tissue to prevent the sutures from tearing out, and to tie first the upper suture and then the lower one with such manipulations as would serve to spread out the advanced tendon beneath the corneal end of the conjunctival wound, and over that portion of the sclerotic to which it is hoped it will adhere. The eye should be strongly and accurately adducted during these manipulations, by catching the scleral remains of the cut tendon of the external rectus in forceps, and so turning the cornea, without tilting its horizontal meridian, well over into the internal canthus.

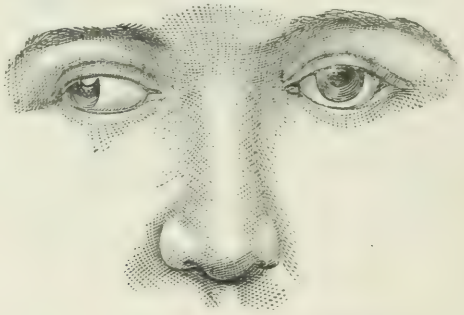
I have, commonly, also divided the external rectus of the fellow eye, in cases in which the divergence exceeded three lines, especially when the adductive power of the interni was greatly weakened.

There is, commonly, considerable reaction after the operation, but it is easily controlled by cold applications. It now remains to give some cases illustrative of the operation, without going into prolonged descriptions.



The preceding cuts, taken from photographs, show the case of a young lady who had had amblyopia of a high degree from childhood, and progressive divergent squint. It was not expected that vision would be improved, the operation being undertaken to remove the deformity, and to relieve a constant sense of fatigue in the eyes. The internus of one eye was advanced by the method described, and both externi were cut.

The following cuts show a case in which a wandering oculist had divided both interni, at the same sitting, for convergent squint. The divergence was about five lines, and the sinking of the caruncle was marked. The eye most affected was very amblyopic, and had mixed astigmatism. The fellow eye was emmetropic, and its vision normal; internus of worst eye advanced; both externi divided; result shown.



Cases might be multiplied, but already we have exceeded the limits fixed by us when we began the narrative. At some future time, we may trespass upon the society to describe another method for the cure of divergent squint, for which we have numerous illustrations.

ARTICLE XXV.

Labio-glosso-laryngeal Paralysis. By E. R. Hun, M. D. Read before the New York State Medical Society, February, 1871, and published in the American Journal of Insanity, for October, 1871.

William W——, aged fifty-eight years, began to complain in May, 1869, that the saliva dribbled from his mouth when speaking or reading. One month afterward he said he was conscious of a difficulty in the pronunciation of words, although at this time it was so slight as not to be perceptible to those with whom he conversed. The following autumn there was a very evident hesitation in his speech; he talked slowly and deliberately, but correctly, excepting a defect in the articulation of certain words, and his voice had assumed a nasal tone.

In February, 1870, he visited some friends in the northern part of New York, and was able to travel alone. While in the country he placed himself under the charge of a physician, and electricity was employed but without benefit, as in his letters to his family he stated that he was growing worse.

He returned to Albany in June, 1870, in the following condition: Complete loss of speech; difficulty in deglutition, any effort to swallow being attended with paroxysms of coughing and suffocation; paralysis of the tongue, which could only be protruded a quarter of an inch beyond the edge of the teeth; body well nourished and appetite good; partial loss of motion in both arms, especially on the left side; pain in the thumbs, arms, and back of the neck; mental action unimpaired, except that the emotions were easily excited so that he laughed and wept without sufficient cause; could write perfectly with his elbow resting upon the table, but was unable to raise his arm so as to feed himself; could walk without difficulty.

In July it was noticed that he dragged his feet a little, but he could still walk alone for a considerable distance. After this time, the movements of the arms and legs gradually became weaker, until in November he was unable to get up and down stairs, while at the same time the difficulty in deglutition increased. His writing became more and more illegible, and in the latter part of November he had to give it up altogether, and communicated his wishes to others by pointing out letters with a stick placed in his hand for the purpose.

In December he had a severe chill, which was followed by acute pain and complete loss of motion in the left arm, which became œdematous, and remained so until a few days before his death. He could walk only a few steps, and had great difficulty in doing even this.

During December the flexor muscles of his hands and arms began to contract, and in the latter part of the month his feet became œdematous. Sight, hearing, and appetite remained good throughout.

I saw the patient through the politeness of Dr. Fowler, his attending physician, from whom I obtained the above notes, on the morning of January 4th, 1871.

He was then sitting in a chair propped up by pillows, being unable to lie down on account of dyspnœa; complete loss of motion, except a slight nodding of the head and a little movement of the right hand; sight and hearing appeared unimpaired; speech entirely lost; mouth partly open and lips immovable, except a slight twitching of the left angle of the mouth; cheeks flaccid; tongue completely paralyzed and lying on the floor of the mouth; respiration feeble and occasional coughing; pulse ninety per minute and regular; both arms paralyzed and slightly flexed and attempts to straighten the fingers caused pain; lower extremities completely paralyzed, and feet and ankles œdematous; defecation natural; micturition slow and frequent; attempts to swallow occasioned distressing cough and suffocation, and the aliments were often rejected through the nose.

He remained in this condition until the afternoon of the same day, when an attempt to swallow some porridge brought on severe coughing and strangling. At seven o'clock that evening he died without a struggle.

Autopsy twenty hours after death.

External appearances. Rigor mortis well marked. Body spare, but not emaciated. No very evident signs of muscular atrophy.

Head. Scalp very dry. Scull cap removed with great difficulty, owing to adhesions of the dura-matter, which was torn in trying to separate it from the bone. Dura-mater very much thickened. Arachnoid normal, with considerable serous infiltration of the subarachnoidean connective tissue. Pia-mater much injected. The cerebral substance, both cortical and medullary, appeared to be of normal color and consistency, but exceedingly hyperæmic. The following condition of the cranial nerves was found. 1st. Olfactory, normal. 2d. Optic, normal. 3d. Motor oculi, normal. 4th. Patheticus, small. 5th. Trigeminus, on the left side flattened, gray and softened;

on the right side, larger and very hyperæmic. 6th. Abducens atrophied, especially on the left side. 7th. Facial atrophied, and gray on both sides. 8th. Auditory, normal. 9th. Glosso-pharyngeal, normal. 10th. Pneumogastric, atrophied on both sides. 11th. Spinal accessory much atrophied. 12th. Hypo-glossal so much atrophied on both sides as to resemble mere threads or filaments of connective tissue. The corpora striata and optic thalami were normal. The cerebellum was very hyperæmic, but otherwise presented nothing unusual. The pons Varolii and medulla oblongata appeared to be of firmer consistency than usual.

Spinal cord. Spinal meninges much injected. The anterior spinal roots were atrophied, especially on the left side. Transverse sections of the cord showed the anterior cornua of gray matter, as well as the left anterior and right lateral columns, to be of a dark rose color, as if very hyperæmic.

Thorax and abdomen were not examined on account of objections on the part of relatives of the deceased.

Portions of the brain, cerebellum and spinal cord were immersed in absolute alcohol, preparatory to making sections for microscopic examination. When sufficiently hardened thin sections were made, stained with carmine, rendered transparent with benzole, and mounted in balsam.

The sections of the brain revealed nothing abnormal. The sections of the cerebellum a very hyperæmic condition of the part and a granular degeneration of the large ganglionic cells forming the middle layer of the cortical portion.

Thirty sections were made at various levels of the medulla oblongata, involving the roots and nuclei of implantation of the cranial nerves, especially those of the facial and hypoglossal. Careful microscopic examinations of these specimens with objectives varying from 15 to 900 diameters, demonstrated that the portion of medulla forming the floor of the fourth ventricle was the seat of several pathological lesions.

There was a decided hypertrophy or overgrowth of the connective tissue, which appeared to have encroached upon and to some extent replaced the several groups of ganglionic cells which form the nuclei of implantation for the facial and hypoglossal nerves. The individual cells comprising these groups were separated from one another, and in many instances had lost their stellate appearance, their radiating processes having been destroyed so that each cell remained isolated and disconnected from its neighbors. These cells had also under-

gone a degenerative process which in many cases rendered them simply a collection of fine granules, and a deposit of brownish yellow pigment had taken place to such an extent as to give the cells an appearance almost precisely similar to those which are normally found in the locus niger of Soemmering; they were fewer in number than usual and diminutive in size.

Sections of the cord made in the cervical, dorsal and lumbar regions showed a sclerosis with increase of connective tissue in the anterior and lateral columns, which was most marked in the left anterior and right lateral columns. The multipolar ganglionic cells, situated in the anterior cornua of gray matter, were fewer in number than usual, and many of them appeared granular and very much pigmented.

The form of disease of which the above is a typical example, has been described by Trousseau and Duchenne, and a number of cases have been reported in various medical journals. It commences with a paralysis of the lips and tongue, which is followed by a paralysis of the soft palate and pharynx; in many cases the disease does not stop here, but gradually attacks the muscles of the trunk and extremities. There is no muscular atrophy, but simply a loss of motor power. In those cases where an autopsy has been made, the roots of the hypoglossal and some of the other cranial nerves have been found to be atrophied, but little or nothing has been said of the condition of the central origin of these nerves, except in one case described by Dr. Samuel Wilkes, in the last volume of Guy's Hospital Reports. Dr. Wilkes says that "there was very obvious gray red change of the calamus scriptorius from the nib upward and outward for half an inch." This change would necessarily implicate the cells of implantation of the facial and hypoglossal and probably of the spinal accessory roots, and we therefore have a central lesion accounting for the peripheral paralysis. Dr. Wilkes also states that the anterior half of the white matter of the cord was hardened and atrophied. In the case above reported, not only the anterior but also the lateral columns of the cord were affected, so that we have a descending degeneration of the motor tracts of the cord, consecutive to a primary lesion situated in the medulla. This is fully in accordance with the views presented by Bouchard, in his work on secondary degenerations of the spinal cord, and accounts for the progressive paralysis of the trunk and extremities which follows the original loss of motion in the lips, tongue and palate.

An interesting fact in connection with this secondary disease of the cord, is the ultimate permanent contraction of the flexor muscles.

This contraction, with rigidity, was present in the case reported, and is also mentioned by Trousseau as having occurred in one of his cases. Bouchard speaks of it as an almost constant symptom of secondary sclerosis of the anterior columns of the cord.

This case affords an illustration of the aid which the study of physiological anatomy may derive from pathology. We have here a very complete destruction of the cells of the implantation of the facial nerves, and yet only a part of the muscles supplied by the facial are paralyzed. The orbicular muscles of the eyes are unaffected, and the patient can wink voluntarily, while the buccinators and orbicularis oris are perfectly paralyzed. This can only be explained by the fact that some of the fibres of the facial nerve (as has been stated by Stilling and Van Der Kolk) do not pass into their proper nucleus, but either pursue an upward course along the raphe of the cord, or else run into small ganglionic groups at a considerable distance from the nucleus proper. Thus from the fact of the non-paralyzed condition of the orbicularis oculi, notwithstanding the destruction of the nucleus of the facial nerve, there can be but little doubt that the fibres referred to by Stilling and Van Der Kolk are those which supply this muscle, and it is probable that these fibres terminate in ganglionic cells in the neighborhood of those from which the fifth pair of nerves originate, and thus we have an anatomical arrangement which may aid in the explanation of the reflex phenomenon of winking.

The prognosis in this disease is decidedly unfavorable. Among the many cases reported not one case of perfect recovery is mentioned, and it is probable that the improvement which seems to have taken place in some of them was only temporary. The manner of commencement may be very sudden or slow and insidious, but there is but little variation in the ultimate termination. Death takes place either as a result of suffocation, from the impaction of a bolus of food in the glottis, or else the slow accumulation of mucus in the lungs, which the patient can no longer cough up, gradually results in asphyxia. As for treatment there is little to be said. Life may be prolonged by the application of galvanism to the upper part of the cord and along the tracts of the affected nerves, but nothing as yet known has any power to retard the progress of the disease in the nerve centers. The following is a list of authors, with references to where the cases are reported:

Trousseau—*Clin. Med.*, t. II., p. 334.

Duchenne—*Electrisation localisée Doc.*, p. 640; *Gaz. Hebd.*, VIII., 12, 1861.

Dumenil—*Gaz. Hebd. de Med. et de Chir.*, June, 1859, p. 390.

Samuelson—*Berl. Kl. Wochensch.*, No. 27, 1868; *Half-yearly Compend. of Med.*, January, 1869.

Ramskill—*Lancet*, June, 1869.

Herard—*Gaz. des Hopitaux*, No. 20, 1868; *Rankin's Abstract*, January, 1868.

Müller—*Hospit. Titend*, Nos. 22 and 23, 1861; *Schmidt's Jahrb.*, vol. 113, p. 169; *Year Book of Medicine*, 1862.

Tommasi—*L'Union*, 114, 1862.

Wilks—*Guy's Hospital Reports*, vol. XV.; *Rankin's Abstract*, July, 1870; *British Medical Journal*, March 19, 1870.

ARTICLE XXVI.

Prolapsus Uteri. Its chief causes and treatment. By Thomas Addis Emmet, M. D. Surgeon-in-chief of the Woman's Hospital of the State of New York.

Mr. President.—I present for the consideration of the Society the subject of prolapse of the uterus, with its chief causes and treatment. So far as this extensive field and the time allotted me will admit, I shall review the local treatment where the displacement has resulted from uterine disease. My chief purpose, however, relates to the application of surgical means under circumstances where the local treatment would be likely to fail if relied upon exclusively.

The term "falling of the womb," as used by the profession at large, is without meaning. It is but the expression of a symptom, without conveying the slightest idea as to the cause or true condition. It is like unto other terms of common use, which do harm by misleading those who do not think. With many, as soon as a diagnosis is made of "falling of the womb," the dominant idea at once presents itself to introduce a pessary, without any clear appreciation of the cause, and with the effect of frequently aggravating the condition by the means resorted to for relief. It is empirical thus to treat the effect as the cause, and but little progress can be made in the science until this error is fully appreciated. Prolapse of the uterus should mean simply an effect, from some cause by which the organ remains persistently lower in the pelvis than in a state of health. To establish a uniform standard is impossible, as there is an individuality of position normal to each female. In other words, we will sometimes discover in a perfectly healthy female with a large pelvis a degree of displacement which should be accompanied, were it the disease, with well marked symptoms indicative of the condition, and yet she remains unconscious of any deviation from health.

The position of the uterus, when uninfluenced by disease, will vary frequently in the same individual. But as a standard, Savage describes the roof of the pelvis and normal position of the uterus as follows: "A plane passing horizontally backward from just below the subpubic ligament to the attachment of the utero-sacral ligaments at the sacrum would indicate the level where the utero-vesical peritoneal reflexions pass from the pelvic organs to the pelvic walls. Thus

would also indicate the situation of the vesico-vaginal septum; that is, the base of the bladder and comparatively unyielding side (upper column) of the vagina." "At the commencement of the posterior third the finger comes in contact with the os and cervix uteri, the uterus projecting the whole of its neck downward and backward through a hole, as it were, in that part of the roof. The remainder of the roof is formed by the vaginal cul-de-sac, or curved extension of the posterior (dilatable) side of the vagina, the utero-sacral ligaments completing this structure up to the sacrum." The uterus is supported in this plane by the utero-sacral ligaments, the sub-peritoneal pelvic cellular tissue, the broad ligaments, and lastly the round ligaments. As the uterus descends in the pelvis the strain is distributed in the order above given, and does not put the round ligaments on the stretch until it is about to escape from the vaginal outlet.

The chief causes of prolapse of the uterus may be grouped under four heads, and results from one of these, or several combined. First, the uterus may be crowded down into the pelvis from abdominal pressure above, by the weight of some extraneous development in the cavity, from habitual constipation, tight lacing, etc. Second, the prolapse resulting from increased size of the organ, from imperfect involution, obstructed circulation in the organ itself, or elsewhere, from pathological changes of its tissues, the effect of inflammation, or from development of tumors intimately connected. Third, after parturition, the vagina may remain dilated with a loss of tone in part or throughout the canal. Fourth, from laceration of the perineum, we find rectocele and cystocele resulting, and with the prolapsing vaginal walls, detect the descending uterus at various points, from a slight displacement to complete procidentia.

It is beyond the scope of this paper to enter into a consideration of the first group of causes, acting mechanically from the abdominal cavity to depress the uterus below; I will therefore dismiss this subject by reference only to the effect of constipation. It must be borne in mind that the rectum in the female is shorter, much larger in diameter, and straighter than in the male, and I think, that in regard to size, the colon in the female is also larger. The rectum is seldom found empty, except immediately after defecation, and as a sluggish condition of the bowels is the rule with the vast proportion of females, fæcal accumulation sometimes takes place to an enormous extent, even in individual cases, where more particular attention is paid to some regularity of habit. Apart from the mechanical effect directly

exerted on the uterus by this state of habitual constipation, the organ and its appendages are kept in a state of chronic engorgement from obstruction to the venous circulation, with consequent increase of weight. Savage, in his work on the female pelvic organs, states that "venous obstruction in the course of the ascending cava or spermatic veins influences immediately the state of the pelvic venous circulation; all the pelvic veins soon become surcharged with blood. In cases where the free return of blood into the general system has been obstructed in this way, the pelvic veins become varicose, and the meshes of the pelvic cellular tissue full of such enlargements." With a full appreciation of the fact that within a given space no other portion of the body contains such a vast network of vessels, and from the erectile character of the tissues within which these vessels are matted, so as to give an almost incredible capacity for the accumulation of blood, when any obstruction occurs to the venous circulation, we can readily understand how little is to be accomplished by any mechanical support to the uterus, or from local treatment alone. Farther, these anatomical considerations clearly explain why, with this condition of habitual constipation, we so frequently find the uterus too low in the pelvis, with more or less congestive hypertrophy, and among a class of patients as the result of an artificial and indolent life, spent without purpose.

Every secretion of the body has become perverted, the nervous system shattered, and the capillary circulation feeble, as shown by cold extremities and frequent headaches. Menstruation is irregular, either as to time or quantity, but as a rule scanty. They are hypochondriacs, and have long contracted the habit of being sick, the most serious complication of all others. It is true that these symptoms exist to a greater or less degree in all uterine disorders; yet here, with a train of symptoms pointing most forcibly to the uterus as the main seat of disease, I can but consider the abnormal local condition as an expression only of that of the whole system. The fact is, on careful investigation of such a case, we are unable to detect a sufficient cause in the local condition to account for the continual backache and inability to stand. The neck of the uterus is usually soft, and may be the seat of a slight erosion; it is frequently tender on pressure, but nearly every portion of the vagina is found equally so. A vaginal leucorrhœa may exist with a slight follicular discharge from the uterine canal. I have found such cases more frequently among the sterile and the unmarried, between thirty and forty years of age, where nature has begun to enter her protest against a blighted sexual

life, spent in violation of her laws. Local treatment may be needed, but it is secondary, and futile of relief, in comparison with the benefit to be derived from that instituted by the skillful practitioner who places the whole field of medicine under contribution. The mental and nervous condition of the patient has become so perverted frequently, that for the time being she must be regarded to a certain extent as insane. For her relief her physician must at once attempt to gain her entire confidence, so as to have her so completely under his control as to be able to exert every moral influence, and without it he will make but little headway. She must be inspired with the belief of her recovery beyond question, and in her desire to carry out the wishes of her physician, she gradually begins to think less of herself. So thoroughly impressed are such cases with the belief that they fully understand their (own) individual condition better than any one else, that without this essential relation exists, the physician will be met at every point with some well balanced argument to defeat every effort on his part to break up the confirmed habits of an invalid. So essential do I regard this personal influence, that for many years I have refused to undertake the treatment of such extreme cases, except in a private hospital where I can exercise the influence with the feeling, on the part of the patient, of entire dependence on my will. We must regulate every habit of life, correct the condition of the bowels, bring about a proper assimilation of food by a judicious diet, and to restore a healthy circulation and action of the skin, by means of Turkish baths. When the patient is too feeble to take a proper amount of exercise, the muscular development must be brought about by rubbing, and a proper movement of the limbs. Coffee, opium, and the indiscriminate use of whiskey and brandy, must be given up at the beginning, as so much poison in their condition, while the moderate use of tea in most cases is advantageous. As the powers of assimilation are feeble, the food should be given at regular intervals, simple in character, concentrated in form, and moderate in quality. For the same reason as the digestion is feeble, all preparations of iron, and many of the tonics, although needed, are worthless until this condition has been improved. In treating females suffering from uterine disease, we should never lose sight of the condition of the portal system from its connection with the pelvic circulation, but more particularly in its relation with the function of digestion. At dinner, taken in the middle of the day, a wineglass of old sherry, or a strong Burgundy claret, will aid digestion, while all malt liquors, as a rule, are injurious. To produce a good night's rest, in such as are unable to take any exer-

cise during the day, the use of anodynes must be avoided, if possible, while chloral is the least objectionable, but the bromide of sodium answers better in the majority of cases. If possible, the patient must be made to sleep from fatigue; she should retire early, and while in bed be well rubbed from head to foot, and finally, while lying on her back, with a bed-pan under hips, have a basin or more of hot water slowly pumped into the vagina. This has a most soothing effect, and so much so, that the patient is frequently asleep before the nurse has finished her duties. The room should be moderately cool and well ventilated, the light extinguished, and the patient left alone for the night. Many are exceedingly nervous and hysterical at the outset, but, while exhibiting every kindness, firmness must be maintained and no sympathy wasted, with the result, that soon a healthier tone manifests itself. There is no better remedy for nervousness or hysteria, to improve the moral condition, than to leave the patient entirely to herself. This course is apparently a harsh one, but it is kindness in the end, for unless some impression can be made, and none better for the purpose than to arouse at first a feeling of indignation, the patient can seldom be taught to control herself, until she is forced to learn that this can be done in the beginning of an attack, before self-restraint becomes impossible. It soon becomes a matter of pride to exert this control; it has a healthy influence, and the result is, that I seldom see any nervous manifestations among my patients after the first struggle. Every day the patient must take a certain amount of exercise, be in the open air as much as possible, either walking or riding, and not, by sparing her complexion lose the benefit of the sunlight. I have observed such rapid improvement in the strength of feeble children produced by exposing the whole body to the action of the rays of the sun, that I have often thought, were it practicable to institute even partially this treatment in these cases, we would obtain most excellent results.

I have thus attempted to give a general outline of the constitutional treatment, as it were, applicable to one class, but which, in fact, must in a degree have a bearing on all diseases peculiar to the sex. It is impossible, with so extensive a subject, to do more, leaving the details to be supplied by the judicious practitioner. I have avoided any reference to local treatment, from the fact that it is necessary to bring the health of the patient up to a certain point before any active means can be instituted with success.

As a means to relieve the local irritability, the congestion, and at the same time give tone to the parts, the use of large hot-water injections

into the vagina is most valuable. A pint or two of hot water at ninety-eight degrees or one hundred degrees Fahrenheit, thrown into the vagina, will at first cause a certain amount of congestion of the vessels; if the injection, however, be increased to a gallon or more, and administered slowly by an attendant, with the hips elevated so that every portion of the vagina is open by the water retained within the passage, the vessels will contract. On passing the finger into the vagina after an injection properly administered, the canal will be found smaller, as if an astringent injection had been used, and the uterus will be higher in the pelvis. It will be noticed, also, that the sensitiveness has been diminished. By the use of cold water the same effect is produced at first; but when reaction takes place, the vessels will remain more engorged than before. All my patients, without regard to the special local form of disease, receive one or two such injections a day, only the quantity and temperature being varied for the individual case. It is not an empirical or theoretical procedure, but founded upon sound principle and observation. Some eleven years ago, when cold water injections were in general use, I satisfied myself that the practice was hurtful, and with views of my own, in private practice substituted hot water. During nearly nine years past, since I have been at the head of the Woman's Hospital, the use of hot water for vaginal injection has been the practice. To the last pint of water a certain amount of chlorate of potassa, chloride of sodium, borax, carbonate of soda, glycerin, carbolic acid, or any other remedy applicable may be added, and if the medicated injection be taken at night, a large proportion of it will be retained until morning. Strong astringent injections to check vaginal leucorrhœa are hurtful. The discharge is but an evidence of engorgement, from which the pelvic vessels are attempting to be relieved, as from a safety-valve. The sooner a leucorrhœa is checked the better, to save the patient's strength; but it can only be done with safety by removing the cause.

With irritability of the vagina it is seldom that any pessary can be used with advantage; and even when this symptom is absent an instrument in any form, as we shall see hereafter, will do harm if the vagina is a capacious one. It will be of advantage, however, as soon as it can be borne, to place a support of cotton, saturated with glycerin, in the vagina every morning, before the patient goes out for exercise, and have it removed on her return. The best form is in the shape of a half-grown mushroom; the top should be soft and large enough, when placed in front of the cervix uteri, to lift it slightly from the

floor of the pelvis. The stem portion is made by wrapping it with twine, and a part of the string should be left long enough outside of the vagina to remove it.

If we exclude the existence of fibroids and the effects of inflammation, either in the uterus itself or neighborhood, we will find that imperfect involution, from the increased weight and enlargement of the uterus, is the most common cause of prolapse. The enlarged uterus is indicative of a want of tone in the general system, and therefore the most careful constitutional treatment will be needed. After this course has been instituted, and all tenderness in the neighborhood of the uterus has been removed by the hot water injections, I rely chiefly upon the use of sponge tents to lessen the size of the organ. When it has been determined that sponge tents can be used with safety, I introduce one or more of them, dipped in a solution of glycerin and carbolic acid, as large in diameter as can be borne, but less in length than the canal. It is prudent to place the patient in bed at once, and administer afterward an opiate enema per rectum if needed. The tent should remain for twenty-four hours at least, if not producing much irritation; but after the uterus has become accustomed to the use, I often allow them to remain forty-eight hours for the purpose of obtaining the fullest amount of benefit from the profuse discharge. As soon as the discharge becomes offensive, the vagina should be washed out several times a day with a little carbolic acid added to the tepid water injection. It is well not to pull the tent out directly, but seize it in the grasp of a strong pair of forceps, and remove it without traction by twisting. The fluid on compression escapes into the vagina by this manœuvre, so that the sponge becomes much less in size than the dilated canal. As it is loosened and withdrawn from the cervix, by reversing the twist, all the discharge in the vagina will be again taken up. The advantage gained by removing it in this manner is to lessen pain and diminish the quantity of blood which would be lost by withdrawing it forcibly. I then wash out the uterine canal, thoroughly, with either hot or tepid water, sponge out the fluid as far as possible, and either inject or swab out the canal with Churchill's strong tincture of iodine, using the precaution to place beforehand a little cotton beneath the cervix, so that the excess does not run into the vagina. This form of iodine, when thus freely applied, constitutes a good antiseptic, and I know of no other means which will cause a more prompt action of the uterus, for in several cases I have noticed the contraction so rapid as to eject the excess of fluid from the os beyond the vaginal outlet. I have

used this application for some eight years past, and always treat the uterine canal in the same manner after the removal of fibroids or other growths within the cavity. Those who are familiar with the practice at the Woman's Hospital, will bear me out in the statement that the method is a satisfactory one, and free from danger, provided the same care is taken beforehand to prepare the patient properly, that the full dilatation may be effected without risk. Churchill's preparation of iodine in these cases, as well as a temporary astringent for arresting uterine hemorrhage, is the best of all styptics, from the fact that it does not coagulate the blood so as to leave clots in the canal. Once in ten days is as often as it is safe to follow out this practice, even when the patient is constantly under observation, for a certain amount of rest is necessary for a few days afterward, that the general health may not suffer from the confinement. In some cases cinchona in combination with the bichloride of mercury acts well as an alterative; in others arsenic does better, or quinine in combination with strychnia as a tonic. I will say, in passing, that apart from the effect that quinine may have in improving the general condition, it certainly, at times in large doses, seems to exercise a direct action on the uterus by increasing its contractile power. I have seen no beneficial result whatever follow the use of any preparation of ergot in these cases.

If the vagina has not been too much dilated in its upper portion by the descent of the uterus, frequently the organ will decrease now rapidly in size when held in position by a well fitting instrument. By this means the circulation becomes properly established in the organ. If the vagina is capacious, however, no permanent benefit will follow the use of any form of pessary, although in the beginning great relief is sometimes afforded. The anterior vaginal wall, with the uterus, will crowd to such an extent into the instrument that the circulation becomes interfered with, the hypertrophy will be increased, and at the same time the capacity of the vagina enlarged. If a larger size instrument is substituted, the prolapse of the vaginal wall can be prevented by putting the parts on the stretch, and the uterus may be held well up in the pelvis, but the same result takes place in the size of the organ from the obstructed circulation. It must be borne in mind that the cervix uteri in health is seldom more than two and a half inches from the urethra. If an instrument can be worn of not more than three inches in length, its use will frequently be followed by benefit; but should the vagina be so enlarged as to need a greater length, I believe it to be the exception if the vagina regains its nor-

mal size without an operation (to be described hereafter) is resorted to. The best instrument in my experience is the block tin ring, which must be moulded to suit each individual case. The best form is some modification of the double lever, with the portion entering the cul-de-sac the larger curve of the two, so as to throw the fundus of the uterus somewhat forward, if possible, by elevating the neck. It should be made pear-shaped, with the larger fenestrated portion above, and care must be taken to make a proper depression at the other end to shield the urethra from pressure. The chief difficulty in shaping an instrument properly, is behind the pubes, from the fact that one side of the symphysis is often wider than the other, with a marked difference in the curve; if this is not looked to it either causes the instrument to rotate in the vagina, or it will cut into the tissues. When the patient lies on the back with the instrument in place, there must be space enough to allow of the finger being passed entirely around its outer circumference, or it will bind at some point when she stands. As soon as it is ascertained that the instrument can be worn with benefit, it is well to have it duplicated in silver gilt, with the diameter of the tubing much increased beyond that of the block tin. There are two advantages to be gained — a broader resting place for the tissues, and a most important one, in allowing the instrument to be removed, when advisible, on retiring at night, without endangering the shape. It is well, when there is simply a prolapse, to remove the instrument frequently while the patient is quiet, so that the circulation may not be impeded, and I often give my patients instructions at night to assume the position on the knees and elbows after taking out the instrument, and to open with the fingers the outlet of the vagina in this posture, so that the uterus may be carried well up into the pelvis by atmospheric pressure. If the patient is already for bed, a large portion of the air will be retained if she carefully assumes the horizontal position.

A most frequent cause of prolapse from congestive hypertrophy, and a condition most difficult to relieve, is found as a result of ill-assorted marriages, and with females where means have been resorted to with the object of guarding against conception by preventing the escape of semen into the vagina. I believe for a healthy performance of the function, that the stimulating presence of the semen is needed in the vagina to allow the female organ to be properly relieved of the incident congestion. This habit is to be classed in the same category with self-abuse, and, next to criminal abortion, is the most serious evil of the day with reference to the future welfare of the country.

It leads frequently to mutual disgust and divorce, from the often entire absence of sexual pleasure on the part of the female, or at best to great unhappiness at the disappointment in after life, as the want of children begins to be appreciated when it has become now desirable or convenient to have them. The ovaries are often exceedingly tender on pressure, and one or both prolapsed with the uterus. The organ itself is large, and has a soft, doughy feeling. Often from the uterine canal there is a profuse follicular discharge, and I have no doubt, as a cause of subsequent sterility, that some change takes place in the fallopian tubes, by which their canals become eventually obstructed or occluded. Menstruation, as a rule, is profuse and painful at first, although, from the same cause, engorgement, it may be even scanty. My opinion is, that the organ gradually undergoes fatty degeneration, and that atrophy is to be anticipated earlier in life, with almost entire cessation of the menstrual flow long before the change of life becomes fully established. We also observe, in some degree, a similar condition brought about by various other means instituted for the same purpose—to prevent conception—illustrating how nature exacts, with unrelenting justice, a penalty for every violation of her laws. The physician's skill will be taxed to the utmost in any case of long standing, to bring the nervous and constitutional condition to a healthy standard. With such tonics as may be indicated, I have used, for a length of time, as large doses of iodide of potassium as could be borne without deranging the stomach. It is well frequently to paint the whole vagina with the strong tincture of iodine, and I have often been surprised at the great sense of relief experienced from this application. Care must, however, be taken, in consequence of the great pain produced, that no portion of iodine is allowed to come in contact with the tissues of the vaginal outlet. Much benefit results from the frequent application of carbolic acid to the uterine canal, passed to the fundus. I have also used freely iodine for the same purpose, but its action is not so marked. Small and frequent blisters should be applied over the region of the ovaries when much pain is experienced. As the patient has rarely any strength to lose by keeping up a discharge, the blister should be at once dressed with a little loose cotton, which, as it adheres, is to be undisturbed until the surface beneath has become healed, when it separates. Sponge salt-baths in the morning, and a hip-bath in the middle of the day, or before retiring at night, are often beneficial if the temperature is so regulated that a proper reaction takes place; where they do not have a marked benefit,

however, at the beginning, and if the ovarian pain is in the least degree aggravated, positive harm will result from continuing their use. As soon as the patient's condition will warrant the move, an entire change of climate and scene is most beneficial.

When acute metritis exists, or cellulitis in the neighborhood of the uterus, the organ is found low in the pelvis, but it soon becomes fixed in position. To enter into a treatment of this condition is foreign to my purpose; I will merely throw out the hint in regard to the frequent and prologed use of hot water injections, administered at as high a temperature as can be borne.

We may next briefly consider lacerations of the cervix during parturition, and I may also class the lateral operation for dysmenorrhœa when extended to the vaginal junction, as frequent causes of hypertrophy of the uterus, and consequent prolapse of the organ. In proportion to the amount of gaping do we recognize the resulting effects of the injury. Laceration in the median line, from before backward, is attended with comparatively the least of the evil consequences, unless the fissure has become the seat of chronic inflammation consequent upon retarded healing of the surfaces. The bad effects are less marked from the fact that the lateral walls of the vagina keep the sides of the laceration in contact. The reverse is the consequence of lateral laceration or division, and, in proportion as the uterus descends into the pelvis from this cause of irritation, will the gaping be increased, owing to the posterior flap catching on the recto-vaginal septum, while the anterior one is forced forward in the axis of the vagina, toward its outlet. Gradually from this forcing apart of the flaps chronic follicular inflammation is set up, which extends upward within the canal, and in proportion to the extent of disease will the mucous membrane be rolled out from above, to become the seat of an intractable erosion. These follicles thus inflamed, gradually undergo cystic degeneration, with fatty degeneration of the neighboring tissues. At first the neck is unusually soft and hypertrophied, as well as the remaining portion of the organ. As the little cysts burst and empty themselves of a clear, serous fluid, the tissues become indurated, especially if nitrate of silver has been used to heal the supposed ulceration. Ultimately, however, as the emptied cysts contract, atrophy of the neck, as well as the whole organ, takes place. Without a familiarity with the true condition the previous existence of laceration may be readily overlooked, and is to be recognized by drawing together opposite edges of the cervix by means of a tenaculum in each hand, when the fact will be fully appreciated, and

that in comparison with the size of the entire uterus, a less amount of hypertrophy of the cervix exists. After denuding the lacerated surfaces the flaps must be brought together and united by deep silver sutures. This is necessary, for as often as the erosion is healed by any application, will it recur from the constant spreading apart of the flaps on exercising. This operation is the only means of relief, for, after thus removing the exciting cause, the hypertrophy will gradually diminish, and with it the prolapsus.

We recognize also in long existing and neglected disease a cause of hypertrophy with prolapse, from the too frequent or injudicious use of nitrate of silver and other means resorted to for healing a supposed ulceration. The cervix has been not only hypertrophied, but indurated to such a degree as to entirely change the normal condition of the tissues. To bring about a healthy change in the condition of the mucous membrane is impossible, but the induration and weight of the uterus may be lessened by the use of sponge tents, were it not that great risk of exciting pelvic inflammation always attends the dilatation of an indurated cicatricial cervix. Sometimes much can be accomplished by the frequent use of the acetic solution of cantharides for the purpose of blistering the cervix. If the disease has not become too extreme, from the counter-irritation and profuse watery discharge produced by its use, a healthy change may be brought about. As a rule, however, it will be necessary to denude to the submucous tissue the entire cervix with a pair of scissors, and then slide a sufficient amount of the vaginal tissue over the stump to cover it, and secure the flaps by silver sutures, leaving a sufficient gap in the line over the os uteri. It is an operation very readily performed from the great ease with which the flaps can be formed from the vaginal tissues. By thus removing tissues bearing a close analogy to that existing in a tonsil which has long been the seat of chronic inflammation, and transplanting in its place a fresh set of healthy mucous follicles, we gain a condition by which the absorbents remove rapidly the induration and hypertrophy. This operation was introduced by Dr. Sims a number of years ago, and has proved a most valuable procedure.

We may now consider briefly the hypertrophy and consequent prolapse of the uterus due to disease of the lining membrane of the canal. The term chronic inflammation should not be used, from the fact that we so rarely meet any product except in the acute form. With so-called ulceration there is no loss of tissue, and after death, when the capillary vessels have been emptied, we may look in vain for any evidence of the previous disease. When the disease is confined to the

lining membrane and the submucous tissues, the condition is due to perverted nutrition, or, in other words, imperfect circulation. We may have hypertrophy of the papillæ or mucous follicles of the membrane lining the organ, from chronic engorgement, with enlargement of the uterus, or atrophy from the reverse cause.

With the means at our command, we are seldom able to form an accurate idea as to the extent of the disease involving the canal. From the greater number of follicles below the internal os, this portion of the canal is the most liable to disease, but extending gradually to the fundus and submucous tissue, according to its duration. When an erosion exists on the cervix, I believe it is almost without an exception, but a cropping out of the diseased condition above, or an excoriation from the uterine discharge constantly bathing the parts. As such, it should be treated by applications to the disease above, when it will be found to heal rapidly under the use of hot water vaginal injections and by keeping the surface clean. Of all remedies, none would be so serviceable as frequent uterine injections of hot water for contracting the capillary vessels, and above all keeping the parts free from irritating discharges. Unfortunately, however, we have no means of doing this properly, except in such cases where we may deem it safe to fully dilate the canal with sponge tents. When used, the pressure thus exerted is often beneficial, especially when the discharge is transparent and of a gleety character. After dilation, the nozzle of a Davidson syringe may be introduced with safety in the canal, and a large quantity of hot water injected with great benefit, a bed-pan being used and the water thrown in with care. Unless the canal is sufficiently dilated to introduce the index finger readily, any uterine injections must be attended with great risk of serious consequences and should never be used.

In the application of remedies to the uterine canal, we must necessarily include healthy tissue from our inability to define accurately the extent of the disease. Therefore, we must be careful in not doing too much, and in selecting agents of a character as free from risks as possible. To the use of all caustics and to the nitrate of silver, I am unqualified in my opposition. Applications of an astringent character are most serviceable, and I know of none answering better for this purpose than the nitrate of silver, were it not for its after-effects. Induration and contraction of the canal is certain to follow its use, in the vast proportion of cases. Erosions readily disappear under the use of potassa cum calce and other caustics, but it is only done by destroying the integrity of the mucous follicles by

producing cicatricial tissue, while the evil consequences are not always in proportion to the strength or frequency of use. Chromic acid, diluted with equal parts of water, Churchill's tincture of iodine, solution of the persulphate of iron, acetic acid, when induration exists, chlorate of potash and glycerin, tannin and glycerin, and carbolic acid with equal parts of glycerin are the agents which experience has taught me are attended with the least risk. The chromic acid answering better when there exists a muco-puriform discharge, and should be applied a few days after each menstrual period. It is necessary that the patient should be confined afterward to bed for a week at least, and carefully guarded from exposure to cold. It is not safe to apply this remedy, or any other to the uterine canal, if there is any indication of lurking cellulitis or tenderness on pressure. We must rely on constitutional means—hot water injections and daily vaginal dressings of glycerin, until the case is in a proper condition. Chromic acid, when diluted as above mentioned, does not seem to affect healthy tissue in the uterine canal more than that produced by the use of iodine. It, however, does not answer for office practice, and, in many respects, carbolic acid is preferable. The latter remedy can be applied with advantage once a week, and has the merit of safety when the patient is not directly under control. Some years ago, I introduced an instrument called an applicator, which is a flattened flexible silver sound. After ascertaining the exact curve of the canal, by means of the silver uterine probe, a portion of cotton is twisted around the applicator; the latter is then bent to the proper curve, and having saturated the cotton with the agent to be applied, it is passed to the fundus. Before making the application, the canal must be freed as much as possible from the accumulated discharge, by means of a proper syringe, or the effects of the remedy will be, to a great extent, neutralized. It is necessary that the cotton should be only well moistened, as an excess of fluid will often give unnecessary pain and excoriate the vagina.

We will now consider the surgical procedures to be instituted when the case has become a hopeless one, either through neglect or failure after resorting to all other means applicable. After labor either imperfect involution remains—and as the heavy organs settles in the pelvis, the upper portion of the vagina becomes gradually dilated—or this portion of the passage having been overstretched, and not recovering its tone, allows the organ to rest on the floor of the pelvis until hypertrophy results from obstructed circulation. Gradually the cervix is pressed downward and forward in the vaginal axis, so as to

produce a degree of retroversion of the fundus according to the advance made in the prolapse. If the perineum has not been lacerated, and the vesico-vaginal septum, the least yielding portion of the canal, maintains its integrity, the advance toward procidentia is very gradual. By degrees a rectocele is formed, which in time dilates the vaginal outlet; a cystocele may then follow, with the cervix uteri protruding at the vulva. More frequently the integrity of the vesico-vaginal septum remained unimpaired, while the uterus escapes over the fourchette in consequence of the greatly dilated vaginal outlet, while the relative distance between the cervix and neck of the bladder has remained unchanged.

Lastly, laceration of the perineum may have occurred in labor, short of involving the sphincter ani. The vaginal column being thus deprived of a proper support, it will prolapse from below upward, forming both a rectocele and cystocele, dragging the uterus down to appear externally when complete inversion of the vagina has taken place. In rare instances, a cystocele will first form, dragging down the uterus to the vaginal outlet, with only a prolapse of the upper portion of the recto-vaginal septum, and the occurrence of a rectocele does not take place until, after long standing, the vaginal outlet becomes sufficiently enlarged, by absorption, to offer it no longer a support.

For the relief of procidentia, Marshall Hall, many years ago suggested, but did not, I believe, put in practice, the plan of uniting two denuded strips running parallel on each side from near the cervix uteri to the vaginal outlet, thus making a double vagina, as it were. The procedure was found, however, to fail in practice, as the anterior wall would prolapse and gradually press back the septum, or by absorption separate the recently united surface until sufficient space was produced for the escape of the uterus.

December 20, 1864, I read a paper on Procidentia Uteri, before the New York Obstetrical Society, which was published in the *New York Medical Journal*, April, 1865. From this paper I quote: "This fact" (referring to the failure of Marshall Hall's method) "led Dr. Sims, in February, 1858, to commence the scarification near the neck of the bladder, with two denuded surfaces, from a common point, diverging in the form of a triangle to each side of the cervix uteri. These surfaces were brought together and secured with interrupted silver sutures in the median line. By so doing, the neck was crowded toward the cul-de-sac, and the fold of vaginal tissue thus formed in front of the cervix effectually prevented any prolapse of

the uterus. Previous to the time of Dr. Sims' removal to Europe, in the summer of 1862, we both had frequently operated in this manner without the necessity of any modification occurring. In September, 1862, after three months of great suffering, one of the first patients operated on by Dr. Sims, in this manner, presented herself at the Woman's Hospital for relief. She stated that during four years she had been entirely relieved by the operation, when suddenly, while in the act of lifting, she was seized with a persistent tenesmus, greatly aggravated in the upright position. On examination, the line of union was found perfect, with no prolapse of the vaginal wall. But the neck of the uterus had slipped behind the septum into the pouch, thus throwing the fundus into the hollow of the sacrum and fixing the organ in this position. With great difficulty the neck was disengaged. After returning the uterus to its normal position, immediate relief was obtained. On reflection, it became evident that the occurrence of this accident would be in ratio to the extent of the previous procidentia. The more complete the procidentia from relaxation of the vaginal walls the greater the pouch resulting from the amount of tissue folded in. From malposition, the whole organ (but more especially the cervix) is always greatly hypertrophied. After restoration to its normal size, as the neck is no longer grasped by the fold, the latter would naturally in time override the cervix, and force it into the pouch. Nor could this result be guarded against, although the line of union be extended at the time of operating, so as to crowd the cervix uteri fully into the cul-de-sac of the vagina. Impressed with these views, I succeeded in obtaining an examination of two cases operated on by me some eighteen months before. In both, the neck was found behind the septum, but producing no inconvenience beyond a backache following any undue exertion. Both had experienced entire relief for a long time, but feared that they were gradually relapsing into their old condition."

On the 10th of October, 1862, I operated on one of these cases, to overcome this difficulty, by closing the triangle. In other words, I connected the two diverging lines by a continuous denuded strip from the extremity of one side of the triangle to the other, running across in front of the cervix uteri, thus effectually preventing the possibility of an entrance into the pouch. Dr. Sims subsequently followed the same plan, leaving, however, a small opening in the cross section, immediately in front of the cervix, which, from its position, is to a certain degree objectionable. During some six or seven years I operated frequently without making any particular change, but fully

appreciated, from the many difficulties to be overcome and constant practice necessary for its proper performance, that the operation could never come into general use. Half an hour at least was occupied in denuding the surfaces, the whole having to be completed before any portion could, with advantage, be brought together, while, during this time, quite a serious loss of blood frequently occurred. Throughout the whole operation the hand of an assistant, occupied in holding an instrument for the purpose of keeping the cervix in the cul-de-sac, obstructed the light, and was in the way. From the mobility of the parts it was exceedingly difficult to keep the proper line of scarification so as to bring the freshened surfaces exactly in the median line. A failure in the column of a direct line of support allows the uterus ultimately to increase the curve and prolapse on the concave side of the line. Above all, to pass the continuous sutures through the cross section in front of the uterus, and to fold over properly these surfaces, the one on the other, without drawing them together as with a running string, was exceedingly difficult.

Some two years ago I attempted to simplify the operation. After anteverting the uterus the patient was placed on the left side, Sims' speculum, or some modification of the instrument, introduced, and the neck of the uterus kept crowded up into the cul-de-sac by a sponge probang in the hand of an assistant. I then endeavored to find some point about half an inch to each side of the cervix, and a little behind the line of its anterior lip, from which I could draw, with a tenaculum in each hand, a triangular-shaped fold up to a common point directly in front of the uterus. When two points were found which could be thus brought together without undue tension, one of the tenacula, securely hooked in the tissues, to indicate the point, was released from the hand for the purpose of freshening a surface about half an inch square, at that designated by the other tenaculum. Then a similar surface was freshened around the first tenaculum, and a strip removed from the vaginal surface in front of the uterus, about an inch long by half the width. Having passed a needle, armed with a silk loop, beneath each of these freshened surfaces, a silver wire was attached to the loop, drawn through, and secured by twisting, thus bringing together, it will be seen, these three points in front of the cervix uteri, with the effect of forming a like but somewhat smaller fold than that produced by Sims' method with the cross section. The chief advantages gained are these: With the loss of only a few drops of blood, the neck of the uterus, at the beginning of the operation, can be secured in the cul-de-sac out of the way, and thus dispensing at

the same time with the hand of an assistant. By the old operation the tissues to form the fold were drawn from behind, as it were, and wrapped around in front of the cervix, while the chief support was from the column formed in the median line, by turning in the redundant tissues below. By the last method a direct lateral support is gained from the pelvic fascia above, giving, in many cases, by this means alone, a sufficient support, entirely independent of the column to be formed afterward from the tissues turned in along the base of the bladder. The completing of the operation, after having fixed by this means the position of the cervis, is very simple. Two folds on the base of the bladder, in the shape of an ellipse, will have been formed, extending from the points secured in front of the uterus nearly to the vaginal outlet. The excess of tissue is to be turned in by finding, from time to time, opposite points near the crests of each fold, which can be brought together free from tension. With the view of preventing a loss of blood, but half an inch need be denuded at a time on each side, the sutures then introduced and secured, thus advancing step by step until the operation has been completed by turning in the folds until lost on the vaginal surface. From four to five sutures should be inserted to the inch, a silk loop being passed first, to which the silver suture is to be afterwards attached, for the purpose of drawing it through. The needle should be introduced so as to include a liberal amount of tissue, and the sutures twisted only just sufficiently to bring the raw surfaces in contact, or the tissues included will become strangulated from the swelling of the parts. They can be removed on the eighth to the tenth day. No special after-treatment is needed beyond keeping a self-retaining sigmoid catheter in the bladder, as after the operation of vesico-vaginal fistula, until the parts have become well united, and at the same time confining the patient to the recumbent position for two or three weeks.

Where the upper portion of the vagina is only dilated, so as to let the enlarged uterus rest on the floor of the pelvis, I perform the same operation in principle, but the line is extended only for a short distance until a point has been reached where the fold can be terminated on a common level with the vaginal surface.

Beyond doubt many cases can be relieved, so far as local means are in question, by rest, astringent injections, and a properly fitting pessary. But beyond a certain point these means are futile, and a pessary in any form will prove but of temporary benefit and in the end positively detrimental. When the vaginal walls are very much relaxed, it is impossible to prevent them from crowding down within the cir-

cumference of any fenestrated form of pessary to an extent producing almost strangulation, unless it is of a sufficent length to put the passage on the stretch. In either case, however, the result is the same by increasing the capacity of the vaginal canal and enlargement of the uterus from obstructed circulation. When a solid instrument is used, like a globe pessary, the capacity of the canal is also increased by the walls crowding in around it and pressing it forward as a dilator. One instrument after another will be resorted to, with the necessity of increased size for relief, until the canal may be dilated to the full extent of the pelvic passage, and ultimately the patient becomes beb-ridden or the procidentia remains complete.

When there is no laceration of the perineum, or dilation of the vaginal outlet from rectocele, the operation described as applicable for the anterior wall may be of itself sufficient for relief. If, however, the posterior portion of the canal has been involved, the uterus will gradually advance and ultimately escape from the vagina, even after the anterior operation has been performed, but the relative distance between the cervix uteri and neck of the bladder gained by the operation will remain unchanged, as we have seen. While the radial distance between these two points is preserved, the base of the bladder will swing as a trap-door, were the hinge placed under the pubes, and advances with the uterus as it is dragged down by the prolapsing posterior wall, to pass through the vaginal outlet as soon as it has been dilated sufficiently. This condition has been frequently overlooked, and the operative procedure consequently unjustly condemned. After the first operation it is impossible for the uterus to prolapse in consequence of the increased radius gained in the position of the cervix from the symphysis pubis as a common centre, provided the lower portion of the canal is in a state of integrity. When such is not the case, it will be necessary either to close the perineum alone, or in addition perform the operation for rectocele.

The operation on the posterior wall for rectocele resembles closely, in general principle, the one already described. The denuded surfaces are to extend from the fourchette upward in the form of an ellipse toward the cul-de-sac, until the protruding tissues have been turned into the vaginal level. It is necessary to operate with the patient on the back, with Sims' speculum introduced under the arch of the pubis. The operation is a very difficult one to perform from the want of room, and the venous hemorrhage is frequently excessive. The superabundant tissue should be pressed back upon the rectum by a stiff sound, curved in conformity with the vaginal canal, and

held in the median line by the hand of an assistant. Along the edge of the sulcus thus formed, as the tissues lie in contact on the vaginal plane, the denuded line must be extended. As the tissues are brought together, with a tenaculum in each hand, to judge of the proper degree of tension, it is well to snip out a small portion of mucous membrane at opposite points to serve as a guide to indicate the line to be freshened. Although we have the disadvantage of an obstructed view from the flow of blood when the operation is commenced from above, this plan is attended with the least inconvenience. A limited portion of tissue should be only freshened at a time, the sutures introduced and twisted as the operation is advanced. As it is necessary that the sutures should lie perfectly flat, seize the extremity with a pair of forceps and place a tenaculum under the wire close to the vaginal surface to act as fulcrum over which the suture is bent downward, then remove the tenaculum and make pressure about the middle, at the same time that the extremity in the grasp of the forceps is bent up in the opposite direction, cut off the end, and if the manœuvre is done properly the suture will remain in close contact with the vaginal surface.

In the operation for closing the perineum, the denuded surface should be extended for half an inch or so on the recto-vaginal septum, so that a firm support to the canal shall be given. Five interrupted sutures are generally needed, three of which should include at the same time the denuded space on the rectal septum, and the other two the labia alone. I leave each suture about three inches in length, and when the operation has been completed, secure the whole number together, like the radii of an open fan, by a loop of wire around their ends. There is less risk of labial abscess or accidental irritation of any individual suture by adopting this plan. The urine must be drawn with great care, for if a small quantity is allowed to come in contact with the surfaces brought together, or to run back into the vagina, the success of the operation will be endangered. The patient must be kept in bed with her knees tied together, and opium administered from time to time per rectum, if needed. The perineal sutures should be removed on the sixth or seventh day, for they become sources of irritation if allowed to remain longer, and the knees must be kept tied afterward, until the parts have united firmly. The sutures for the rectocele may be allowed to remain for two weeks or more, until it is safe to introduce the small size speculum under the arch of the pubes.

By the various operations described, the vagina will be restored to its original size and condition, with no other change than the fold formed in front of the cervix, which even will disappear in the course of time. I wish to impress particularly this fact, that the natural capacity of the vagina is not lessened, nor can it be by these operations. The object is simply to relieve the overstretched tissues from strain, that they may retract, and this is done by taking in a plait, by which means the tissues thus turned in, if so relieved, regain their tone so far that in a few months all trace of the operation disappears. The greater proportion of the profession is impressed with the erroneous idea that the object is to narrow the vagina, and so the operative procedure is persistently termed. Hence the common prejudice existing calculated to defeat an unbiased investigation. The vagina can be easily shortened by uniting denuded surfaces transverse to its axis; but to narrow the canal in its diameter to a less degree than existed in the virgin state after puberty is impossible by any surgical procedure, and it is never accomplished except as a result of inflammatory action. If by any chance the denuded surfaces brought together were so far apart that when approximated an undue degree of tension existed, the sutures are certain to cut out, leaving the parts in the original condition. This is due to the unyielding line formed along the vaginal sulcus on each side, from the cellular tissue connected with the pelvic fascia; it can be stretched to a certain degree, but no suture can stand more than a few days its persistent tenacity. I speak from an experience based on some sixty cases, upon which number I have operated by different methods during the past ten years. My facilities have been unusually great for watching the after effects, for in nearly every case of failure in any particular feature I believe that sooner or later the patient has returned, giving me the opportunity of studying the cause, rectifying the difficulty, and guarding against a repetition of the same error. Having had the advantage of assisting Dr. Sims in his first cases some fifteen years ago, and afterward watching the gradual development of every progressive stage of the operation to its present degree of perfection, I feel as if I may speak with authority.

I must apologize for having occupied so long the valuable time of the Society, but I have found it impossible even in a most superficial manner to condense within a reasonable space a subject of such general interest and of so extensive a bearing.

ARTICLE XXVII.

On Urethrocele, Catarrh, and Ulceration of the Bladder in Females. By NATHAN BOZEMAN, M. D., New York. Fellow of the New York Academy of Medicine; Corresponding Member of the Gynæcological Society of Boston, Mass.; Honorary Member of the Obstetrical Society of Louisville, Ky., etc.

These three local lesions are intimately related in one morbid state or malady. By insensible degrees urethrocele occasions vesical catarrh, and this terminates in ulceration: thus we find them associated in the same subject. The insidious progress of the malady often baffles the physician's acumen in seizing its distinctive phases, or in assigning to each a beginning and an end. Its cause or causes may escape our ken, and the disease be quite advanced before it is suspected. Urethrocele, its primitive lesion or first manifestation, may have occasioned but little inconvenience for years before surgical aid was sought, and this neglect may have entailed catarrh and ulceration in that pathologic order for which continuity or contiguity of tissues is responsible. At this late period, it is often impossible to trace the relations of cause and effect. Urethral stricture, so formidable to the male bladder, rarely exists in the female, and the absence of the prostate gland might seem to afford an immunity from vesical inflammations; but experience belies this. If the male urethra, by its greater length and lesser calibre, is more exposed to blennorrhagia and its consequences, the female is subjected to the still graver perils of child-birth. In both sexes the morbid results are much the same, but as their causes differ widely by anatomical and physiological peculiarities in each sex, so the treatment must also differ.

An English physician, Sir Charles Mansfield Clarke,* called attention to an affection of the female urethra, which he designated as "a thickening of the cellular membrane surrounding the urethra throughout its whole extent, accompanied by a varicose state of the vessels of the part." "If," he continues, "the parts are exposed and the patient presses down, the diseased part will be brought into view, putting on the appearance of a tumor, but which is nothing else than a thickening of the urinary passage. On the surface of this thickened part blood-vessels ramify, of a size large enough to admit of being opened by the point of a lancet. * * * If pressure is made

* On Diseases of Females, vol. 1, p. 295, 1814.

upon the part, the swelling and redness subside for a time, but both return directly upon the pressure being discontinued.

"Sometimes a pouch forms in the posterior part of the urethra in which a few drops of urine lodge, and from which situation it may be pressed out by the finger applied to the part. If a catheter is introduced into the urethra, it may be carried backward to the part where the lodgment of urine is found. Upon this cause depends, perhaps, one of the most troublesome symptoms of the disease, a frequent desire to make water, both in the night and during the day, so as to interfere with the patient's rest."

From this elaborate description, every experienced gynæcologist may recall one or more examples of the lesion termed urethrocele, even though he may have given little attention to it. That its pathological importance has been overlooked, is apparent from the fact that Prof. S. D. Gross, in his treatise, otherwise so complete, upon the urinary organs,* says nothing of urethrocele. He finds ulceration oftener in the female than in the male bladder.

I cannot fully indorse Dr. Clarke's pathology of urethrocele, nor regard it as easily remediable by the puncture of the varicose veins on its surface, and by astringent injections. Dr. McClintock,† of Dublin, has merely repeated Dr. Clarke's views, and neither of them seem to have apprehended those relations of urethrocele to vesical catarrh and ulceration, which first fixed my attention. I have traced these lesions back to their beginning; watched their progress, and noted how the bladder became compromised.

Causes.—Urethrocele may oftenest be traced to contusions of the urethra and urethral portion of the vagina, from impaction of the child's head in the inferior strait, and the abuse of instruments in delivery.

The male organ, by excess of size and too frequent coitus, may prove an exciting cause.

Acute urethritis may act either alone or coinciding with cystitis, traumatic, as from passage of a calculus, etc., etc., blennorrhagic, or catarrhal.

Case I.—A typical case, traced to chill from exposure to cold, placed under my care, October 22d, 1870, by my friend, Dr. T. C. Fennell, of New York, illustrates the stealthy march of the disease, which compromised the bladder only in the course of the third year.

Mrs. L., aged twenty-eight, is well formed; has a dark complexion,

* On the Urinary Organs, 1855.

† On Diseases of Women, p. 239, 1868.

with brown hair and hazel eyes. She first menstruated at fourteen, then not again until seventeen, and two months after her marriage, her health being then delicate.

She became at once pregnant, and during gestation her lower limbs were swollen. Confined at full term, and ten hours in labor, she had convulsions, lay three days insensible, and did not leave her bed for two months. After this she enjoyed good health and menstruated regularly. Her husband soon died, and for ten years she has been a widow. Her illness dates from the spring of 1868, and from an imprudence not unusual with her, going out of a warm room, and standing upon the cold side-walk until chilled through. She then suddenly experienced an urging to micturate, and felt much scalding in voiding the urine. The need of micturition now returned every quarter of an hour or so, and this urging and scalding continued severe for several days. It has never entirely disappeared, and she has had to rise a dozen times or oftener in the night, passing only a few table-spoonfuls of water each time. This has always been worse at her periods, also from acid drinks, and certain vegetables, especially onions, always cause much scalding of the urethra. This is accompanied by a sense of fullness or tension at the vaginal orifice, which increases until the call to urinate becomes irresistible. She has scarcely any rest day or night. The water is not expelled in a stream, but merely wells up from the urethral orifice in a broken column, and runs down upon the external parts.

In the spring of 1870, her general health was sensibly impaired, menstruation was scanty and painful. She had constant pressure at the neck of the bladder, and bearing down when she sat on the vessel. This also extended to the rectum. Exacerbations followed every imprudence in diet, and were provoked by standing, by walking, or by repressing the call to micturate.

She now observed a tough ropy mucus adhere to the urinal, sometimes a gritty brick-dust sediment, and even a little blood. These bad turns would last five or six days, with tenesmus that exhausted her strength.

During several months she submitted to injections of a solution of nitrate of silver into the bladder. These were very painful and gave no relief. Such was her condition when she applied to me. She had lost, she said, about fifteen pounds in weight.

Examination revealed a prolapsus of the urethrovaginal septum, between the nymphæ and labia, in a tumor as large as a pullett's egg, which rested on the perineum, filling up the ostium vaginæ. It was

soft, with transverse pletes, and somewhat congested on its surface. It could easily be pushed up into the vagina by the finger, but on removing this, would drop down as before, and become prominent when the patient rose to her feet. Touch revealed a contracted vaginal canal and anteverted womb. A fibrous growth the size of an almond, and rather sensitive to pressure, occupied the anterior wall just opposite the internal os. Both the neck and body of the womb were considerably enlarged. An elastic catheter, No. 8, in exploring the urethra, met obstructions at its superior wall, and was deflected downwards into a curve before passing into the bladder, which was morbidly sensitive. A female sound of the same caliber, with a very light curve, encountered the obstruction, and could not be passed into the bladder without severe pain. On withdrawing its beak to a point outside the mouth of the bladder, and raising the outer end perpendicular to the pubes, the beak was made to sweep down in a curve until opposite the most dependent point of the tumor outside the vagina, where the point of the finger detected it. About an inch of the sound now occupying the urethra represented the length of its anterior and inferior surface, extending upwards and a little backward from the bottom of the tumor to the meatus. The upper portion of the urethra measured backward and a little upward about an inch and half from the bottom of the tumor to the orifice of the bladder. This portion of the urethra was also much dilated.

Thus, the whole inferior surface of the urethra formed an angle of about eighty degrees, the superior wall curving deeply downward to meet the two extremities of the legs, as the apex of the angle corresponded to the lowest point of the urethral tumor. The index finger, flexed at the second joint to the required angle, may represent the general direction of the urethra; the first two phalanges making the posterior and inferior leg, and the third, the anterior and inferior, while the knuckle is the apex of the angle corresponding to the most dependent part of the tumor.

The patient, upon changing from the recumbent to the erect posture, would naturally alter the precited directions of the urethra, as regards what now becomes the perpendicular axis of the body. The lower portion is directed forward and upward, and the other upward and backward, with the apex of the angle still far below the outer urethral orifice. The gravitation of the urine in these changes of direction has a bearing on the cause and effects of urethrocele. The urine was acid and contained pus corpuscles.

I will now cite a case of urethrocele with confirmed catarrh of the bladder, after eight years' duration, as I observed it in New Orleans, but a few weeks before the patients's death.

CASE II.—Mrs. B., aged 40, of nervo-sanguine temperament, with auburn hair and fair complexion, sent for me April 14th, 1861. She stated that her troubles of the bladder had commenced in the spring of '53, her general health up to that time having been good. Her youngest child was then several years old. Suddenly, and without her being able to assign a cause for it, she was seized with an urging to micturate, attended with a scalding along the urethra, which returned every few minutes, and was but partially relieved by passing water, the mouth of the vagina remaining the seat of an uneasy sensation. These attacks would be severe only for a few days at first, then abate, leaving her comparatively comfortable, though never quite relieved of smarting along the urethra, when urine was voided. Imprudences in exercise and diet provoked paroxysms more frequent and of greater duration, until at last there was no sensible abatement of the symptoms, but the same incessant gnawing and distress at the ostium vaginæ and in the urethra. She now began to feel a fullness at the mouth of the vagina, especially when she would sit upon the vessel, and every effort to micturate was attended with straining. Soon the urine became thick and ropy, and would scald and irritate the external parts as it ran down upon them. After standing, it became strongly offensive and sometimes deposited a brick-dust sediment.

Coitus had been for years excessively painful, yet the husband had brutally insisted on his marital rights until within a few months before I saw the case. I have never witnessed such intense agony, in the habitual state of a patient still able to keep her feet. Without help she still attempted to do the work of her family. Emaciated, and with features contracted by pain, while answering my questions, she could neither sit nor stand still, but walked the floor, wringing her hands and crying in a wild way. For several months, she said, her sufferings had permitted sleep but a few minutes at a time. The scalding and straining to pass a spoonful or two of urine sometimes exhausted her so that she would fall upon the floor. The thick and ropy deposit seen on the bottom of the vessel when the urine would stand for a while, had been nearly constant for a year past, and streaks of blood sometimes appeared in it. I found great masses of tenacious muco-pus of strong smell and dirty drab color. The urine itself showed a strong alkaline reaction.

On examination, I found the urethral portion of the vagina forming a somewhat curved cylindrical tumor between the nymphæ, and with permanent rugæ across the protruded parts, which were firm and painfully sensitive to pressure.

The distance from a point opposite the vesical orifice to the meatus of the urethra along the vaginal surface was about three inches. There was no cystocele. A large No. 8 catheter, though much deflected downwards from the natural course, readily passed, although with great pain, and brought away only a few drops of urine from the bladder. The finger, introduced per vaginam, ascertained contraction of its canal, with a hard unyielding state of the vesico vaginal septum. The womb was anteverted, with its body pressing down upon the superior fundus of the bladder.

Another urethrocele, with ulceration of the bladder and enormous hypertrophy of its muscular coat, occurrred in the case of a negro woman from Vaiden's depot, Mississippi, who entered my private infimary in New Orleans, November 22, 1860.

Case III.—Eliza McL., æt 40, black, tall, emaciated, ashen countenance characteristic of long suffering, in her sixteenth year had given birth to her first and only child, and had enjoyed good health up to now, '59. While voiding the urine, the stream was suddenly stopped with severe pain and straining, just after which relief was afforded by the passage of a "tough looking substance,"—probably a calculus. An aching in the urethra ensued, with urging to micturate, and scalding urine. This continued two months, with some abatement now and then, and was much influenced by vicissitudes of weather. In January, 1860, she came under the care of Drs. Wells and Davis of Gerrentown, Miss., who treated her palliatively, with teas and opiates. The urine, previously clear, now began to be turbid and slimy, and after standing a while, quite offensive. Every fifteen or twenty minutes she would pass a spoonful or two with painful urging and scalding, to which tenesmus was now added, the bearing down pains being constant. By the month of August they had all the apparent severity of labor pains, and the hypogastric region was sensitive to pressure. Enormous quantities of dark gray, thick, tough mucus were found in the urinal. She could only sleep a few minutes at a time, but her appetite remained fair and bowels regular. The mucous deposit gradually diminished, but at times it would be streaked with blood, and little fleshy looking particles be mixed with it at almost every effort to pass urine. On examination, I found urethrocele with constriction of the vagina above. The vesico vaginal

septum, instead of being prolapsed into a cystocele, as would naturally be supposed under the circumstances, made rather a firm resistance to the finger. The vaginal mucous membrane generally was congested, and much pain attended the introduction of the finger. The womb much anteverted, pressed down the superior fundus of the bladder.

It was somewhat enlarged throughout, and considerably indurated. The urethra was found to be elongated to more than twice its normal length, and excessively hypertrophied through its whole caliber and length, with consequent distortion of the canal beneath the pupic symphysis. The tumor thus formed, was broad and ill defined, firm, though yielding, and very painful under pressure. It could not be pushed up into the vagina. The surface was corrugated, deeply congested and slightly irritated by the urine, which, in passing, would run down upon it from the urethral orifice. A No. 8 elastic catheter passed readily into the bladder, after taking a long and deep curve beneath the triangular ligament. The pain attending this operation was excruciating, especially when the beak of the instrument touched the walls of the bladder, which seemed to be unyielding. Two teaspoonsful only of bloody urine were passed.

On collecting it repeatedly, it was found sometimes quite clear, although colorless flocculi and little fleshy looking particles floated in it when agitated, settling upon the bottom of the vessel when allowed to stand for a while. Some of these fleshy particles were half the size of the little finger nail, and could be recognized with the naked eye as disintegrated mucous membrane. It was difficult to estimate the quantity of this passed in twenty-four hours, perhaps half a teaspoonful, but more or less according to the violence of the expulsive pains. Very little blood was discharged, and only now and then the muco-pus deposit to any considerable amount. A fair specimen of urine showed the specific gravity 1018. It was sometimes alkaline, then acid, now and then neutral. No albumen appeared when it was tested both by heat and nitric acid.

ORDER OF MORBID CHANGES.

In the study of urethrocele, anatomical points to be considered are, the triangular ligament and its relations with the urethra; the muscular structure of the urethra, and the different relations of the urethra to the vagina in the upper and lower parts of its course.

These anatomical peculiarities exert a marked influence on the ætiology of the lesions in question, and supply the first links in the long

chain of morbid results indicated by the histories of the cases above cited, and others known sometimes to follow.

In the male, stricture, although not the first morbid alteration, denotes the first serious interruption of the stream of urine, and superinduces morbid changes in the urethra above, the prostate gland, in the bladder, the ureters and the kidneys.

In the female, rare as it is to meet with organic stricture of the same kind as in the male, the caliber of the canal is quite as often, if not oftener, compromised, and with due allowance for the anatomical differences of sex, the pathologic sequences observe the same order.

The starting point of urethral and vesical lesions in the female is to be sought in the lower half of the urethra, closely related in front with the triangular ligament and blending behind with a spongy erectile tissue of the vagina.

The caliber of the urethra may be transiently narrowed by congestion of its mucous lining, or permanently narrowed by infiltration of coagulable lymph into the underlying cellulo-elastic tissue, which constitutes properly the so-called organic stricture, as in the male, and which, however seldom met with, is liable to the same sequences.

Infiltration into the spongy erectile tissue outside the urethra, by plastic lymph, is, I believe, by far the most common beginning of the morbid process, whatever be the cause that produces it. This interrupts the stream of urine, either by encroaching on the caliber of the urethra, or by deflecting it beneath the triangular ligament, both cases being attended with more or less dilatation above.

The next step in sequence, is increased functional activity of the urethral muscular coat in overcoming the obstruction to the flow of urine. The result upon its structure is hypertrophy, and this will be of the eccentric type, thickening the urethral walls, while enlarging the caliber. Hence, the ease with which large catheters of a proper curve pass at all stages of the disease. False and true hypertrophy here coexist. The true hypertrophy increases *pari passu* with the muscular contraction, and is followed by still greater distortion of the canal at an angle more and more acute, as it turns the triangular ligament and with corresponding contraction of its walls at that point. This mechanical impediment below, coincides with the increased weight and volume of the stream of urine above, to put the walls of the urethra on the stretch in the upper part of its course.

Thus is gradually formed the urinous tumor, which drags down in front the adjacent vaginal wall, appearing as a prolapsus between the nymphæ, and filling up the ostium vaginæ.

The looser attachment of the urethra to the vagina in the upper part of its course facilitates this result. Such is the condition of the parts to which I apply the term urethrocele. Often confounded with cystocele, it is really distinct.

The arrest and retention of but a few drops of urine at first, goes on until this may amount to a teaspoonful or more. It is then decomposed in this pocket, becomes alkaline, and by its irritation provokes congestion of the urethral mucous membrane. This congestion, extending to the vesicle trigone above, will bring white glairy mucus into the urine with vesical and rectal tenesmus. Causes favoring this extension are errors in diet, over-exertion, and excessive coition. Acute cystitis resulting, first complicates the urethrocele, and is more or less decided according to the gravity of its determining cause. After a few days the active congestion disappears or subsides, with the vesical symptoms, leaving the urethrocele persistent. A few days, or weeks, or months afterwards, similar provoking causes, even slighter than at first, will reproduce the congestion, while extending its area, with a corresponding increase of the severity of all the symptoms, as in our case No. 1. Finally, chronic cystitis overshadows the primitive urethrocele, although this still contributes to exacerbate the long and frightful train of evils.

The vesical mucous membrane seems to possess almost boundless susceptibilities of irritation, and the higher this ranges, or the greater the area congested by contact with ammoniacal urine, the more is the subjacent muscular coat excited to contractions of abnormal force and frequency. Hence hypertrophy, increased congestion, blindly seeking relief by increased mucous secretion, and more active fermentation of the urine, deposits of its ammoniacal magnesian phosphate, sometimes hemorrhage into the bladder, blood extravasated into the sub-mucous cellular tissue, or abscesses formed there.

This hypertrophy of the concentric type, although apparently slight in the mucous coat, is more serious in the muscular coat, whose efforts to overcome the urethral impediment and rid the bladder of its acrid contents, keep it growing until it reaches an inch or more in thickness. Autopsies reveal upon its inner surface fassicles of muscle like the interior of the right ventricle of the heart. Its color is deepened by the increase of venous blood in its retarded circulation, and its consistence softened by the same cause. The circular and spiral muscular fibres of the upper urethra are also hypertrophied and overcome the former dilatation of the canal, thus converting the eccentric into concentric hypertrophy of the urethra, which has

become firmer to the touch, while its urinous tumor is less defined. This was the state of things in Case II. No autopsy was here allowed, but similar cases, less advanced — when I have opened the bladder — have afforded complete confirmation of these morbid changes.

From the earliest period of vesical hypertrophy, the congestion of the mucous membrane occasions thickening with an œdematous feeling in the bas-fond, and the contraction of its pliant walls under this irritation, is even greater than is possible after they have been straightened out and expanded by progressive thickening. The vesical cavity, moreover, is reduced by the pressure of the anteverted womb upon its superior fundus, which at this early stage gives it a somewhat cylindrical shape.

On the vagina, the effects of a hypertrophied bladder are seen in the increased firmness of the vesico-vaginal septum, and the congestion and hyperæsthesia of its mucous membrane.

Ulceration initiates the destructive stage of sub-acute inflammation or chronic catarrh of the bladder. It will be superinduced by the excessive hyperæmia of small or large patches of membrane, especially at the trigone and bas-fond, and by extravasations of blood into the submucous cellular tissue, caused probably by rupture of minute veins at the time of strong muscular contractions. In either event the mobility or pliability of the mucous membrane is lessened or destroyed by the inflammation which has reached its acme, and which now terminates in sloughing of the membrane, perhaps to a very limited extent, or by an abscess opening through it into the bladder. It is also to be considered that the mucous membrane rendered friable by previous inflammation, and thrown into irregular folds, may tear when it can no longer stretch under the powerful grasp of the hypertrophied muscular coat. This accident will occur the more readily on account of the anterverted position of the womb, which, I believe, always exists, and the pressure of which may explain the greater proneness to extensive ulceration of the female bladder, as averred by our morbid anatomists.

To whatever cause lesions of continuity in the mucous membrane may be due, urine immediately infiltrates the submucous areolar tissue where it undermines the borders of the lesion, and occasions their peripheric exfoliation. The bladder has lost in this way a fourth, a half, and even the whole of its mucous membrane when death had not sooner supervened. Three-fourths had been lost in case III, comprising the entrance points of both ureters up to the muscular coat.

A large aperture in the vesico-vaginal septum enabled me, by the aid of a reflected sunlight, to see nearly the whole interior of the bladder and observe the morbid process by a true vivisection. Upon the anterior wall, the remaining mucous membrane was much thickened, spongy and pultaceous round its uneven and jagged borders, and of a dark red color, which generally faded into light cherry red, toward the center. The borders, as far as could be seen, were shelving, and the submucous tissue had that dirty grayish look which I have often seen in sloughy wounds of the vagina. The bladder contained but a spoonful or two of urine, mixed with muco-pus, and with the detritus of broken down tissue.

Little pieces of this membrane, such as the urine had previously contained, hung at many points just ready to drop off. The parts showed no tendency to bleed, although some of the shreds bore a deep red point on their edges, where they had been last attached, as I supposed. The muscular coat was laid completely bare as far as the morbid process had reached, but its fibres all seemed to be entire. No skill in dissection could have afforded a more perfect specimen. I was forcibly struck with its resemblance to the interior of the right ventricle of the heart, and it had the same velvety feel to the finger. The retiform fasciculation of its fibres rendered it slightly uneven. Its color was dark red, and its hypertrophy enormous; for this structure, and that of the vaginal wall when cut through, were three-fourths of an inch thick. Much black blood escaped from the former, but the arterial bleeding was very slight.

The vesical cavity was but little reduced in capacity, it was somewhat cordate in shape, and stood open smoothly all around. This was about fourteen months after the first symptoms were noted.

TREATMENT.

The resources of surgery alone are those which I propose to discuss, and first with regard to urethrocele: What are the indications for its radical cure, and by what means can we prevent the morbid action from reaching the bladder? How provide for the uninterrupted escape of urine from the urethra and place it at rest? Our surgical answer is, by tapping the urethra through the vagina at its most dependent point, on the same principle as cystotomy was first proposed by Mr. Guthrie for the relief of catarrh of the male bladder, afterwards practiced by Prof. Willard Parker, of New York, in 1850.* The opening should be large, and prevented from closing in order to

* Gross on the urinary organs, p. 233, 1855.

secure the most perfect drainage. This at once places the canal and its muscular surroundings at rest, both above and below the opening. Even should the bladder be implicated also in the early stage of cystitis, relief at the same time will be thus secured.

The result sooner or later, if the outlet be maintained, is the restoration of the hypertrophied urethra to its normal size and direction, since it is a well-established fact that a muscle thus affected, whether voluntary or involuntary, when placed at rest, returns to its normal size and function. The advantage of this little operation over another, to be presently described, for the relief of the bladder in its more serious complications, is that continence of urine is preserved, and its only inconvenience is the temporary escape of the urine from the mouth of the vagina.

How long should the artificial opening be maintained? We answer, until the cure is complete — from one month to five months, and even a longer time, since our object is to remove the hypertrophy, the cause of the distortion of the canal.

Will the artificial opening close of itself?

No; experience with the analogous cases of urethro-vaginal and vesico-vaginal fistules shows that urine is prejudicial to any closure in these parts, unless guarded against by the proper use of sutures. A second operation, therefore, for the restoration of the urethral canal will be required, and this does not differ from what is ordinarily required in a simple case of urethro-vaginal fistule, for which I should prefer my button suture. In case of redundant length, I should take this opportunity to retrench both the urethral canal and the vagina sufficiently to secure a nearly straight passage from one end to the other, and consequently, free vent to the urine. This operation I have never performed, nor am I aware that it has ever been done by any one else. I certainly consider it the most feasible procedure, and one entirely justifiable under the circumstances. The case above reported having been subjected to all known plans of treatment without relief, and now being upon the verge, I may say, of persistent vesical catarrh, is in my judgment a most suitable subject for the operation, which I expect to perform as soon as the patient can spare the time necessary.

A vesical catarrh that has resisted the ordinary therapeutics, and which threatens life itself, requires surgical intervention. The urethrocele has now advanced to its second stage, being in the upper part of its course, concentrically hypertrophied, as well as the muscular coat of the bladder, and its cure is no less important than that of

the bladder. The operation proposed for the former may overcome the interruption to the stream of urine in the urethra, but it does not cure the morbid state either of the urethra or of the bladder, which has now become the principal seat of disease. Although this may have been an effect of the primitive urethrocele, it cannot now be cured by removing that cause, on account of the insufficiency of the natural outlet of the bladder for the escape of morbid products constantly accumulating. To give them free vent, an aperture the size of half a dollar is made into the bladder through the vesico-vaginal septum just above the vesico-urethal orifice. When the patient is placed in the *knee-chest* position, and my self-retaining speculum introduced, the operation is done without an assistant, and with the greatest dispatch. A pointed knife with narrow blade, a curved scissors and delicate tenaculum suffice. First, pierce the septum at the point indicated; then cut right and left, at least half an inch each way. With the scissors the operation is easily completed, and then the extent of muscular hypertrophy may be ascertained, as well as the condition of the vesical mucous membrane. There will be considerable venous hemorrhage; but this helps to deplete the parts, and need give no concern. The after treatment consists in syringing out the vagina and bladder daily with tepid water.

Prompt relief is usually afforded by the operation, but should vesical tenesmus and bearing down continue, or recur from getting on the feet or from straining at stool, it is to be ascribed to the hyperæmia and consequent morbid sensitiveness of the mucous membrane. It is well in this case to brush over the surface of the membrane with a solution of Nitr. Arg. ʒ j to ℥ j, with a soft sponge every third or fourth day, while employing rectal suppositories of opium and belladonna. The caustic in solid form may be applied should the edges of the wound become unhealthy, or the seat of fungous granulations.

I have now such a case under my care, which I operated on three weeks ago. Tenesmus is induced by sitting up too long at a time, by vomiting, or straining at stool, and is generally relieved by the recumbent posture. The improvement of the bladder makes progress from day to day. The first indications of marked improvement in this case were the ascent of the womb from its anteverted and depressed position, the softening of the vesico-vaginal septum, and the diminished hyperæsthesia of the vagina' mucous membrane.

My present object is to improve the general health, while curing the diseased state of the urethra and bladder. Until these important ends are attained, closure of the artificial aperture is out of the question.

The urine dribbles away, it is true; this inconvenience is the price at which the benefit is purchased, and the patient herself will have no difficulty in deciding which is the least of the two evils. When her general health is restored to its wonted vigor, and all evidences of disease in the bladder and urethra have disappeared, then the question of closure will come up for consideration. Far better delay the operation a month or two after the cure is complete, than perform it one day before that event, for then there is always danger of the operation being lost, and of the final cure being proportionally delayed.*

The operation for closure is the same as for vesico-vaginal fistule.

Had the plan of treatment here advised been adopted in case II., above detailed, I have no doubt that this poor woman might have been cured. I have often regretted that I did not open the bladder upon the spot. Sickness in my own family at the time, caused the delay, and the patient succumbed by exhaustion from her sufferings.

The treatment of ulcerated bladder differs from the last described only in requiring a larger opening, say about the size of a silver dollar, and which should remain longer open. A smaller opening will fail to secure relief. The great thickening of the parts promotes speedy closure with return of all the symptoms. No harm can result from cutting freely, and from giving free vent to all the morbid products of the bladder. When this is done, disintegration of the mucous membrane ceases almost immediately, and a healthy change in the remaining portion of it speedily occurs.

In Case III., the operation as precited, was performed in January 1861, and thus secured not only all its advantages, but the opportunity also of observing the disease in its anatomical characters, and of witnessing the cessation of its ravages.

The effect of my artificial passage upon the bladder as well as on the general health, was most decided. As soon as the operation was completed, the patient was put to bed and slept soundly twelve or fourteen hours, passing from her agony into an elysium of rest, and from this moment her improvement continued without interruption.

On the 15th of June, about five months after the bladder was first opened, the general health was so far restored, that after a careful examination of the urethra and bladder, I determined to effect the closure by my button suture. Now the hypertrophied condition of the urethra had subsided, and the sound revealed no abnormal sensi-

* The author would state that the fistule in this case was closed with the button suture in October, and the patient remains perfectly cured. The fistule remained open about nine months. He regrets not being able to report the result of an operation in Case I, the patient not having applied yet for further treatment. January 22, 1872.

tiveness of the vesical cavity. The vesico-vaginal septum had diminished in thickness from three-quarters of an inch to one-quarter, and was no longer either hard or sensitive. The uterus was less anteverted. The operation was finished in a few minutes, and a catheter introduced into the bladder as usual. Everything progressed very well until the fourth day, excepting that there was a little more mucus in the urine than usual; but at this stage, she complained of an uneasy feeling in the urethra, which was soon followed by vesical tenesmus and straining, forcing out the catheter. Morphine was then given, but still the exacerbation continued, and on the 7th day, when I removed my suture apparatus, the edges of the opening which had not united at all, looked unhealthy.

Now, as soon as the aperture was thus re-established, the symptoms all abated, and after a few days the patient was as well as ever.

She was discharged July 19, with instructions to return home and remain there in the country until her general health was fully restored. This was done, and on February 22d, 1862, she returned for further treatment, with a happy face and looking quite robust. She declared she had not suffered the least pain or inconvenience from her bladder since she had left the infirmary, seven months before. Examination now showed the most satisfactory condition of the urethra and bladder. A few days after admission, I proceeded to close the remaining fistule in presence of my friend, Prof. Samuel Choppin, of New Orleans, and several other medical gentlemen. Now, as far as I could determine by a look into the bladder, the mucous membrane was restored and of healthy appearance, nothing unusual in thickness of the septum. Five interrupted sutures, secured by my button, sufficed to close the opening. Not an untoward symptom followed, and the patient left her bed the week after, with perfect control over her urine. She was discharged April 24th, cured.

Nearly nine years after this, I addressed, last December, a letter of inquiry to Dr. M. G. Davis, formerly of Gerrenton, and now of Greenwood, Miss., who had previously charge of the case, and received, January 18th, this reply:

"The woman, Eliza, I have had no interview with for several months, but previous to my leaving Gerrenton I saw her frequently, and talked with her regarding her disease and the operation you performed. She is entirely cured, and can do as heavy a day's work of washing, ironing or cooking, as any woman. She has perfectly recovered the voluntary power over her bladder, and a full collection of urine can take place before there is any urgent call to discharge it."

With regard to the reparation of the mucous membrane, it must suffice here to declare that it is reproduced, endowed with all its original functions, and having endured for nine years, as in this case, it is hardly doubtful that it will continue on to the natural end of life.

Remarks.

Unusual interest attaches to the above case because of the clear diagnostic and complete cure of a disease, ulceration of the bladder, which pathologists have regarded as a very rare occurrence in either sex.

Louis found it but once in five hundred autopsies. Prof. Gross has met with it a few times, but of limited extent in the male bladder. In one case referred to as illustrative, the ulceration was "an inch in length by half an inch in width."

Dr. Budd, of London, and Mr. Coulson, as Dr. Gross states, have met with extensive ulcerations, such as I have described, in the female. In one case, "fifty-seven years of age," cited by the former, "the bladder was entirely denuded of mucous membrane, except a spot as large as a shilling on the posterior surface of the viscus, just behind the urethra, and at another, immediately round the orifice of the right ureter." There "the disease proved fatal at the end of the ninth month from the first appearance of vesical symptoms." Mr. Coulson's first case was "a French woman, who immediately after her delivery was attacked with all the symptoms of ulceration of this organ, and died within a week after." Here "the whole of the inner membrane of the bladder was found completely destroyed." In a second case observed by him, the disease commenced "a month after marriage," and "terminated a month after delivery," though the extent of the ulceration is not stated. It was remarked that "during the latter half of her pregnancy, her symptoms were much milder than before, but soon after the child was born, they returned with their accustomed severity and destroyed the person."

The history of Dr. Budd's case and mine appear to coincide, but both Mr. Coulson's cases, as I infer from the details of their termination, were instances of gangrene of the mucous coat, resulting from mechanical violence and paralysis. With regard to the mode of diagnosis, and the relief procured by it, my case stands alone. I am not aware at least that surgery records another instance of an ulcerated bladder being opened, illuminated, and inspected before death, and it is probable therefore that no such lesion of equal extent has been cured before or since. To Prof. Willard Parker is due the credit of

first opening the male bladder for relief of catarrh, and this encouraged me to extend the practice to the female bladder, as I have described. Dr. Emmet* and other American surgeons have since adopted the practice in cases of vesical catarrh in the female, and I doubt not with equal success. Prof. Eve, of Nashville, Tenn., reported to Dr. Parker in January, 1866,† the result of the operation in a young man aged twenty-four, laboring under all the symptoms of stone, though none was found. The history of this case does not prove that catarrh of the bladder existed at the time of the operation, but the operation was urgently necessitated, and produced an excellent result, which serves to illustrate the value of the surgical resource in question, and its further application in practice.

Delay in the report of my case of ulceration was due to the suspension of all the medical journals in the south during the war, and now this report acquires a greater interest by my ability to state the actual condition of the patient, after a lapse of nine years since her cure by operation.

* Vesico-Vaginal Fistula, 1868.
† Trans. N. Y. State Med. So., 1867.

ARTICLE XXVIII.

Congenital Hypertrophy of the Tongue. By William Vosburgh, M. D.

In the "Transactions" of the New York State Medical Society for 1868, is the report of a case of congenital hypertrophy of the tongue, reported by Dr. Alfred Bolter, of Seneca county, and which he thinks is the fourth case of the kind reported in the United States.

The following case occurred in the practice of the late Dr. William Vosburgh, of Lyons, and as he had made some notes of it, and designed to prepare it for presentation to this Society, I have completed his manuscript so as to carry out his wishes in the matter.

The subject of this malformation is Miss Bellnette Daily, of Wayne county, aged eighteen years. She is of healthy parentage, and has herself been uniformly healthy. When an infant a small lump was discovered a little to the left of the tip of the tongue, projecting from it, and of a color somewhat paler than the organ itself. This lump continuing slowly to increase in size. When she was three years old her parents consulted Dr. D. D. Hoyt, of Palmyra, who advised argent. nit. to be applied. Two or three applications were made which resulted in producing a much more rapid growth, and nothing further was done to remedy the trouble until her seventeenth year, the date of the operation. The tongue was then so much enlarged that unless a constant effort was made to withdraw it within the mouth it projected so that the tip reached the chin, and the whole of the lower lip and chin were covered by the organ. Before this time her incisor teeth, both above and below, although not diseased, had been removed because of the irritation they produced wherever they touched the tongue.

On the 20th of March, 1870, Dr. Vosburgh performed his operation, assisted by Dr. Samuel Weed, of Clyde, and Mr. M. A. Huff, a druggist of Lyons.

The tongue felt unusually firm, and was about one inch in thickness between the lips. There was, of course, a constant dribbling of saliva, the power of speech nearly destroyed, food could only be taken in the liquid form, and altogether, with her forbidding appearance, made life burdensome.

The tongue was forcibly drawn out of the mouth and seized by straight forceps placed transversely across it and securely held. With

a straight, sharp-pointed knife the organ was then transfixed in the medial line from below upward, as far back as the frænum would admit, and the incision carried forward and outward until completed. The knife was again entered at the first point of incision, and carried forward and outward to the opposite side, so that a V shaped piece was removed, measuring two and a quarter inches in length, and one inch and a half in width at its broadest point. The compression of the tongue between the blades of the forceps controlled the hemorrhage perfectly during the operation, but when the grip was removed the bleeding was profuse. With considerable difficulty six vessels were ligated. The wings or flaps were then brought together, a single, strong silk ligature passed transversely through them and tied over the upper surface of the tongue. Chloroform was used and well borne.

For several weeks after the operation the constitutional disturbance was great. Deglutition was very painful, and it was with difficulty that she could be induced to take food and stimulants enough to keep her from sinking.

Photograph marked 1 was taken before the operation, but not with a view to show the deformity; when taken, her greatest effort was made to draw the tongue into the mouth. Her appearance at the writing of this article is very well shown in photograph marked 2. The tongue is retained within the mouth. Artificial teeth, both above and below, have been fitted and are worn without inconvenience. The organ is still abnormally thick and not so mobile as occasion might require at times, though articulation is distinct and it still answers all the necessary purposes of a tongue.

ARTICLE XXIX.

Biographical Sketch of James Hadley, M. D. By James P. White, M. D.

Professor James Hadley was the son of George Hadley, a New Hampshire farmer, who lived for many years in Weare, near the Massachusetts border of the State. He was the youngest, but one, in a large family of seven sons and three daughters, who all grew up to maturity. James was born in Weare, July 5, 1785. His early youth was spent in the labors of the farm; and it was not until his nineteenth year that he was put upon the course of a liberal education. After two or three years of preparatory study, he entered Dartmouth College as a Sophomore in 1806, and was graduated in 1809, in the same class with Judge Levi Woodbury, of the U. S. Supreme Court. He then entered upon the study of medicine, but became especially interested in the new science of chemistry, which he pursued, at first, under the direction of the ingenious but eccentric Dr. Josiah Noyes. In the autumn of 1808, Dr. Noyes had gone to what was then known as the western district of New York, to Fairfield, in Herkimer county, to give a course of lectures on chemistry, in the young but thriving academy at that place. On his going there again, late in 1809, to repeat his course, Mr. Hadley followed him to Fairfield, and there continued to pursue his medical and chemical studies.

In 1812, the Fairfield Medical College (College of Physicians and Surgeons of the Western District of New York) was established under a charter from the Legislature of the State. The first course of lectures given by the faculty of the new college, commenced in the autumn of 1813. Dr. Hadley was connected with it from the outset as Professor of Chemistry and Materia Medica; and retained this connection until the institution itself ceased to exist in 1840. During the last four years of this time the Materia Medica was separated from his department, and united with Medical Jurisprudence in that of Professor T. Romeyn Beck, the eminent writer on medico-legal science.

For a short time after taking his professorship, Dr. Hadley carried on the practice of medicine in connection with Dr. Jonathan Sherwood, of Fairfield. But the state of his health, and the increasing pressure of his college duties, compelled him to relinquish it after a few years. In the spring and summer of 1818, he spent some months

in New Haven, Conn., for the purpose mainly of pursuing studies in botany, mineralogy, and geology. In botany he received instruction from Dr. Eli Ives, who was an accomplished botanist as well as a much esteemed physician. In mineralogy and geology he attended the courses of lectures given by Professor Silliman to his classes in Yale College. In 1830, he was appointed a professor in Hamilton College, with a department which included, besides chemistry, these other natural sciences. He discharged the duties of this office for four years, during which, however, he continued to reside in Fairfield. But the long absences from home, which were thus rendered necessary, became increasingly burdensome, and he gave up the post in 1834. He had supplied his place during the last term by a favorite pupil and much valued friend, Dr. Asa Gray, who commenced under Professor Hadley, the studies which were to make him pre-eminent among the botanists of his time.

Professor Hadley was, for many years, the only member of the Medical College faculty who resided in Fairfield. Upon him, therefore, fell almost entirely, the labor connected with the business management of the institution. The keeping of the records, the preparation of the annual circulars and catalogues, the care of the library, the collection of outstanding dues, the repairing or remodeling of the old lecture building, the planning and erection of a new dormitory building. These, and many other tasks, were intrusted to him, and were discharged with unwearied assiduity. The trustees gradually withdrew from the practical direction of the college, leaving it wholly in the hands of the professors. Among these, Drs. Willoughby, Beck, McNaughton, and Delamater, with Dr. Hadley, were long associated as colleagues, forming together a faculty of remarkable ability and prudence. Under them the institution enjoyed, for many years, a constantly growing prosperity, until in 1834, it counted more than two hundred students. But about this time medical colleges were established in Albany and Geneva, which could not fail to diminish the numbers in the Fairfield school. The latter, strong as it was in the ability of its officers and the confidence of the public, had a great disadvantage in its location — the village being not only small, but off from the main lines of travel and not easy of access. Its numbers, which had been steadily increasing, began to fall off as steadily. In the lecture course of 1839–40, the last delivered in the institution, there were only one hundred and five in attendance, yet no other medical school in the State had, that year, a larger number. But the Fairfield professors saw that they were carrying on an

unequal contest, in which success was impossible, and they thought it better that the school should cease to exist, before losing character and influence in a lingering, feeble and wretched decline. In the spring of 1840, they all resigned their posts, and these were never filled by subsequent appointment. The Fairfield College stands almost alone among the colleges of our country; in that it has not only died, but has known how to die with honor.

Of its professors, Drs. Beck and McNaughton became connected with the school in Albany; Drs. Hadley, Delamater, and Hamilton, with that in Geneva. To this place Dr. Hadley removed his family in September, 1841. He had already, in the autumn of 1840, entered on the duties of his office as professor of chemistry and pharmacy; and he continued to discharge them until 1853, when he was led, partly by the sense of his advancing years, partly by the unprosperous condition of the school, to retire from his professorship. He consented, however, to retain, as emeritus professor, for some years longer, a nominal connection with the college.

In April, 1856, he removed from Geneva to Buffalo, where his eldest son, Dr. George Hadley, had been established since 1847 as professor of chemistry in the medical college. The father and son united in the purchase of a pleasant, semi-rural place, on Main street, but at some distance from the business center of the city; and here the two families resided under the same roof. Though withdrawn from all public employment, Dr. Hadley did not lead an idle life. He spent much time in chemical manufacture, especially in that of fluid inks. He had made a beginning in this before he left Geneva; and, during his residence in Buffalo, he continued to produce inks which were much used in that city, and highly esteemed by all who used them. At the same time he found the exercise and recreation that he needed, in the daily care of the place on which he lived. His last years were singularly calm and peaceful. His means of living, though narrow, for in the alchemic art of gold-making he was no adept, were quite sufficient for his moderate wants. His mind, if it lost something of its old activity, retained all its clearness to the end. His health, in spite of occasional headaches and asthmas, was generally good. Until about six months before his death, he was able to perform a large amount of work. But at this time, in the spring of 1869, a marked change took place; urinary difficulties came on, accompanied by a general failure of the bodily powers; and after a rapid decline, with much suffering patiently endured, he died, October 17, 1869, in the eighty-fifth year of his age.

In person, Dr. Hadley was tall and well formed, with long face, straight black hair, bushy eyebrows, prominent nose, and dark complexion. His intellectual endowments were solid rather than brilliant. With little quickness of apprehension or utterance, he was patient, laborious, and thorough. Clearness and good sense were the leading characteristics of his mind. For vagueness and haziness of conception, for extravagance and paradox, he had no sympathy. His mental habits fitted him peculiarly for the work of an instructor. His statements, thoroughly considered, were always simple and intelligible. He spared no pains in the preparation of his lectures; even his later courses cost him a great deal of time and study. His experiments were carefully arranged, and rarely failed of success. He was largely endowed with mechanical ingenuity and tact, which rendered him excellent service in this part of his duties.

The range of his reading was not wide; it was nearly confined to the subjects of his professional labors. He wrote with difficulty, and was not fond of writing; but his compositions, elaborate as they usually were, had the appearance of ease. His style was marked by simplicity, naturalness, and good taste. There was seen in all he wrote a scholarly finish and propriety which gave evidence of a good classical training.

He never was a talker; he had little readiness or fluency in conversation. Slowness and shyness combined to keep him silent. But there was nothing repellent or chilling in his taciturnity. He imposed no restraint on the sociality of those about him; on the contrary, he entered into it with genial humor and quiet enjoyment. His native goodness of heart expressed itself in the few words he spoke; and, when he said nothing, it shone out in his face and bearing. He had a suavity of character, the charm of which was felt by all who approached him. He was a man who disarmed hostility; whom no one would address with angry or bitter words. Nothing was more opposite to his tastes and habits than a quarrel. Perhaps the sorest trial of his life was the long feud which rent the medical faculty of Geneva during the latter part of his connection with it. His impulses were all unselfish and generous. He entered heartily into every object of public interest; and he gave freely, often more than he could well afford, to individuals who invoked his assistance.

If kindliness and generosity were marked traits of his character, not less so was his modesty. He was the most unassuming of men. There was no affectation in the low estimate which he was wont to place on his abilities and attainments. The praise which he often

received gave him little pleasure, because he could not feel that it was deserved. For anything like ostentation or parade, he had an instinctive repugnance. He shrank from publicity, and courted retirement. This feeling went so far as to become almost a fault, as it tended to restrict his activity and to narrow the range of his influence. Combined with his habit of self-depreciation, it kept him from making a public avowal of the religious faith which he cherished in secret, and of which the fruits were apparent in his blameless and beneficent life. It was almost in spite of himself that he became a man of widely extended reputation and influence. During his forty years' career as a lecturer, his pupils were numbered by thousands; and there were, probably, few among them who did not revere him as a man, and remember him with real affection as a personal friend.

Dr. Hadley was married, September 4th, 1812, to Miss Maria Hamilton (daughter of Dr. Hosea Hamilton), with whom he became acquainted in Fairfield at the house of her stepfather, Israel Spencer, Esq. In 1862 they had a quiet celebration of their fiftieth wedding-day; and they had already passed the fifty-seventh, when their union was severed by his death. Their children (beside one, the youngest, which died in infancy) were six in number, all born during their residence in Fairfield, viz.: 1. George Hadley, born June 20, 1813; professor of chemistry in the Medical College of Buffalo. 2. Ann Hadley, born May 9, 1815; who still lives in the same house with her mother and older brother. 3. Mary Hadley, born April 9, 1817; died in Geneva, March 5, 1852. 4. James Hadley, born March 30, 1821; professor of Greek in Yale College, New Haven, Conn. 5. Hamilton Hadley, born May 29, 1822; died in Geneva, February 3, 1843. 6. Henry H. Hadley, born July 19, 1826; professor of Hebrew in Union Theological Seminary, New York city; died in Washington D. C., August 1, 1864, of disease contracted in the service of the United States Sanitary Commission.

ARTICLE XXX.

Biographical Sketch of Dr. MINTURN POST, of New York. By G. S. WINSTON, M. D.

The life of the late Minturn Post, M. D., was so thoroughly private and so singularly retired, that the task of his biographer is a difficult one.

He was born in the city of New York on the 28th of June, 1808, and was a graduate of Columbia College in the class of 1828, with Hamilton Fish, Winthrop, Jay, and other men of note.

He entered upon the study of his profession under the supervision of the late Dr. Valentine Mott. After attending the regular course of medical lectures in New York and Philadelphia, and graduating at the Medical University of each city, Dr. Post went to Paris, where, under the instruction of Baron Louis Broussais, and other eminent men of science, he completed his studies.

He was the translator of a work on Auscultation and Percussion, by A. Racibaski, M. D., of the Faculty of Paris, in 1839, which attracted, at the time of its publication, considerable professional notice from all the leading men of the country.

In February, 1842, Drs. Post, Alexander E. Hosack, and J. R. Chilton, were appointed a committee by the board of aldermen to examine and report upon the effect of poisonous smoked beef; which report was highly spoken of, and ordered to be printed in full by the committee of arts, sciences and schools, to whom it was referred. The report closes with the following suggestions:

"In conclusion, the committee avail themselves of this occasion to urge upon the constituted authorities the absolute necessity of adopting some method which shall in future protect our citizens from occurrences of so dangerous a character. For this purpose, they most respectfully propose the erection by the city of one or more extensive abbattoirs, or slaughter buildings, similar in plan to those erected by the French government in 1809; and they would also suggest, as an improvement to that plan, the appointment by the common council of the requisite number of competent persons, whose duty it shall be to inspect all animals slaughtered for the use of the city. By this arrangement they are persuaded that the citizens would gain greatly by the security they would possess that the food consumed by them was pure and healthy, by the cleanliness which would be observed in

the establishment, by the removal of the buildings which at present constitute offensive nuisances, and in the certainty that the system would be burdensome to none, but, on the contrary, would recommend itself on the score of convenience and economy."

The Doctor did not live to see his suggestions carried out; but the very system proposed by him twenty-nine years ago is now successfully practiced in the city in which he wrote the same.

He was elected medical examiner to the Mutual Life Insurance Company, upon its organization twenty-nine years ago, and remained in the uninterrupted discharge of his duties from that period until the time of his death.

He was the sole remaining officer of the company connected with it since its organization, and was of acknowledged pre-eminence in his specialty.

His mind was also most highly cultivated by general reading and reflection, and his general knowledge of history, particularly of dates, was exceedingly accurate.

During the later years of his life he devoted his time to the business of life insurance examinations and correspondence exclusively; and it is to him that the whole life insurance interest owes its system of medical questions and answers, a form which, modified in various ways, is now used by all companies in this country as well as Europe.

His last fatal illness was typhoid fever. He died April 27, 1869, aged sixty-one years.

ARTICLE XXXI.

Biographical Sketch of the late THOMAS COCK, M. D., of New York. By GURDON BUCK, M. D., of New York.

Thomas Cock was born at Matinecock, on Long Island, January 12th, 1782, and died June 14th, 1869, in New York, at the advanced age of eighty-seven years. Early in life he manifested a predilection for intellectual cultivation; and after qualifying himself by persevering study, entered upon the business of teaching in a school-house erected mainly by his own hands. He pursued medical studies in New York, and attended lectures, and took the degree of Doctor of Medicine in 1805, as appears in a catalogue of graduates of Columbia College. After a short residence in the country, he returned to the city and became associated in practice with Dr. Valentine Seaman, whose wife's sister, Miss Elizabeth Ferris, of Westchester, he subsequently married. Dr. Seaman was one of the surgeons of the New York Hospital, and an early and zealous advocate of the introduction of vaccination into our country. Dr. Cock early engaged in the work of medical teaching. The Medical Repository, of 1810, contains a notice of a private course of lectures on anatomy, physiology, and surgery, to be delivered by Dr. Cock. Dr. Seaman participated in the course, and gave instruction on the principles and practice of midwifery. In 1813, an institution styled the Medical Institution, announced their course of public instruction and the branches of anatomy, physiology, and surgery, to be taught by Valentine Seaman, M. D., and Thomas Cock, M. D. Their associates were Nicholas Romain, M. D., John Watts, M. D., on the institutes of medicine, practice of physic, and forensic medicine; Archibald Bruce, M. D., on materia medica and mineralogy; Mr. John Griscom, on chemistry and natural philosophy, and Robert Bayard, M. D., on midwifery and the diseases of women and children. The students of the institution, after satisfactory examination and recommendation by the faculty, received their degree from Queens College (now Rutger's College), New Jersey. Dr. Cock was elected an attending physician of the New York Hospital in 1819, and after serving fifteen years, resigned in 1834, when he was appointed consulting physician, and held the office up to the time of his decease. During the period of his service as attending physician, he discharged the duties of his office with

uniform punctuality and fidelity to the interests of the patients, and with such skill and success as to afford the most entire satisfaction to the Governors of the hospital. The New York Lying-in Asylum, from its foundation, enlisted his active and efficient support, and enjoyed the advantage of his wise counsels in its management for many years. He was Vice-President of the College of Physicians and Surgeons, in New York, from 1827 to 1855, and President from 1855 to 1858. He was one of the original founders of the New York Academy of Medicine, and its President in 1852. The lively interest he took in all our institutions for the promotion of medical education, and the advancement of professional knowledge, as well as those philanthropic associations for the direct relief of human suffering, is evinced by the active part he bore in their operations, and the honorable positions he held in their management.

His philanthropic spirit not only manifested itself in co-operating in the various enterprises of a strictly professional character, but extended to the great institutions of Christian benevolence, so characteristic of his day and time. A highly esteemed member of the orthodox branch of the Society of Friends, he was one of their representatives in the Board of Managers, of the American Bible Society as a Vice-President, and took a lively interest in all their widely extended operations for the distribution of the Holy Scriptures in all lands and languages. Loyal to the traditions of that respected body of Christians to which he belonged, he was a zealous supporter of the New York Peace Society, and their President for several years. It may truthfully be said of him that every good work, having for its object the welfare of our fellow men, enlisted his warmest sympathy.

As a practitioner of the healing art, Dr. Cock was remarkably sagacious and prudent, and very successful. His dignified personal presence and gentle manners, together with his sympathetic spirit, were eminently calculated to inspire confidence, and secure the esteem and even the affectionate attachment of his patients. All who knew him will fondly recall to memory his uniform cheerfulness of temper, and unselfish devotedness in seasons of sickness, and anxious solicitude. He certainly combined, in no ordinary degree, the qualities that fitted him for a trustworthy medical advisor.

Among the members of the medical profession, he sustained a high and most honorable position as a safe and skillful practitioner, loyal to principle and duty; one who could be trusted with unfaltering confidence. As an obstetrician, he attained a high reputation in the profession, as well as among the public, and enjoyed an extensive

patronage. For the last forty-three years of his life, he was a subject of gout, and for several years preceding his death, frequent and painful attacks confined him to his chamber, and restricted his activity.

His Christian faith, which was exemplified in his well-ordered life, sustained and cheered him under the protracted sufferings of his last years. The unvarying cheerfulness and submission which he manifested, were truly edifying to all who enjoyed the privilege of visiting him. His bright example may well incite us to emulate his virtues.

ARTICLE XXXII.

Memoir of Phineas H. Burdick, M. D., of Preble, N. Y. By Henry C. Hendrick, M. D., McGrawville, N. Y. [Read before the Cortland County Medical Society December 14th, 1870, and transmitted by said Society to State Medical Society.]

"Another hand is beckoning us,
Another call is given;
And glows once more with Angel steps
The path which reaches Heaven."

As a tribute of esteem to our worthy brother in the profession, Dr. Phineas H. Burdick, and to make his record upon the annals of this Society, we offer the following memoir of his life and services:

Dr. Burdick was of English descent, the third son of Mr. Thompson Burdick, and his wife, Mary Coon Burdick, who, early in life, emigrated from Rhode Island to Deruyter, Madison Co., in this State, where the subject of our memoir was born in June 3d, 1800.

His childhood was passed without anything unusual to mark it. The country was new, his father was a farmer of only moderate means, so that his education was necessarily limited to the advantages of the common school; attending school in winter and working on the farm in summer.

Yet with characteristic energy he was discontented with the ordinary attainments of his school fellows, but pushed onward in his studies and general reading, and early himself became a *teacher* in district schools. Added to his love of study he saw something of necessity urging him forward in mental attainments as a means of livelihood, for he was slender and lacked physical endurance. He had a weakness of chest; always subject to shortness of breath, so that he could not engage in sports with his school fellows, or apply himself vigorously at manual labor. And for this reason, as well as love for the science, was he, at length, led to choose the profession of medicine.

But his professional acquirements were obtained after his majority, and that under difficulties, for, up to twenty-one years of age, whether laboring on his father's or neighbor's farm, or teaching school, his wages were all strictly returned to his father's use. Thus at full manhood, with weakened physical powers, penniless, unaided and alone, he set forth to the acquirement of a noble profession, determ-

ined to "open the oyster or break the knife in the attempt;" which with alternate study and teaching, together with the strictest economy, he accomplished in due time, with no mean acquirements, as attested by his life work.

He studied medicine with Dr. Hubbard Smith, of Deruyter, and Dr. Jehiel Stearns, of Pompey, N. Y. He attended lectures at Castleton, Vt.; was a class-mate of the late Dr. A. B. Shipman, of Syracuse. He was licensed to practice medicine by Onondaga County Medical Society, in 1828, and commenced practice in the town of Scott, Cortland county, and the same year became a member of Cortland County Medical Society.

He was twice married; first, soon after commencing practice at Scott, to Miss Sally Dyer, of Homer, who very soon after died of small-pox, contracted from the messenger who came to obtain the doctor's services. Two years later he was married to Miss Laura J. Phelps, daughter of the late Judge Jabez B. Phelps, of Preble, who was also a physician, but never engaged in the practice of medicine.

By the death of Dr. Burdick, this most estimable and intelligent lady is now left to mourn his loss; also two children, the elder, Mrs. Sarah J. Doolittle, of Paris, Oneida Co., and a son, Dr. D. W. Burdick, an esteemed member of this Society, who for the past few years has shared the burden of his father's practice, and now fully succeeds him, worthily filling his place in the same field of labor and usefulness. In 1833, Dr. Burdick removed to Preble, as successor to Dr. G. W. Bradford, where he has since lived and labored up to the time of his sickness and death; a period of thirty-seven years.

Dr. Burdick, early in his professional career, had severe struggles with poverty. It was years before he was able to pay board bills contracted during his pupilage. During several of the earlier years of his professional life, he rode wholly on horseback, being unable to purchase a vehicle to ride in. The first carriage he ever owned he bought for *five dollars;* a rattling, rickety thing, but he said he felt proud of it. It was *his.*

By assiduity in business he was crowned with success, and at length acquired a competence quite equal to that usually attained by country physicians; though through his manifold charities he had unquestionably given away much more than his accumulated property. He distributed largely of his effects to the needy and various objects of benevolence. He was a "cheerful giver"; often bestowing more liberally than his means would warrant.

His benevolence of character is fully illustrated by the fixed prin-

ciple with him, and the cheerful alacrity with which he did it, of visiting the poor, at all times, as well as the rich; his unpaid services being to him like "treasures laid up in heaven;" like the illustrious Boerhaave, apparently considering "the poor his best customers, for God was his paymaster." His ledgers show an aggregate of $15,000 of unpaid and uncollectible accounts.

Though suffering through life from asthma and bodily infirmities contracted mainly from early exposures in the practice of his profession, he continued to labor, as assiduously as his health would permit, so long as he was able to practice; never, for once, taking a recess or relaxation from business by journeying from home or otherwise, but, year in and out, winter and summer, night and day, in storm and in sunshine, he was sure to be found within the circle of his ride, attending upon the sick, or in readiness, faithful as an argus-eyed sentinel or guardian of their lives, to attend to the first call of duty. He was not, however, in so active practice the last eight years of his life; but it was not until the autumn preceding his death that he so far withdrew from labor as to allow himself to journey from home, at which time he visited the western country.

Amid all this labor he took great interest in affairs relating to the welfare of community. In public matters and improvements generally, he was a natural leader in the village and town where he resided. Having been a teacher twelve years in early life, public schools very naturally engaged much of his attention. He took in them a deep interest, and labored hard to elevate them to higher standards of education. He acted in the capacity of superintendent of public schools several years during his practice.

He several years filled the office of postmaster, and, among them, during the administrations of Jackson and Van Buren. He was offered many positions of political preferment, but, with the above exceptions, he steadily refused them all.

He was forty-two years member of Cortland County Medical Society, and twice its president. He read before it several papers.

He was a member of New York Southern Central Medical Association, and read before it a paper on Collé's fracture of the radius.

He was four years delegate to New York State Medical Society, and was elected permanent member in 1853.

He was much attached to each of these societies, and very punctual in his attendance upon their meetings. He took great delight in his profession; an unusual interest in obstetrical practice; and performed many difficult operations, but left no record of his cases. He was

quite successful in treating fractures; several cases of fracture of the femur, with more than ordinarily good results.

In 1851 the Regents of the University conferred on him the honorary degree of doctor of medicine.

Prominent among the traits of his character, in addition to his great benevolence and charity, was his highest regard for *integrity* in all the relations of life. To his patients he was always truthful. He considered it his imperative duty to let them know their true condition as soon as he apprehended any danger. Yet he was not inclined to soon give over in doubtful cases, but persevered in his efforts, which were so often crowned with success. With great kindness of heart and evenness of temper, with prudence and honesty of purpose everywhere, and considerate sympathy in the sick room, he endeared himself to all.

He never regarded calumny or detraction, wisely considering the better way to meet such attacks was to *live them down*. He despised trickery and quackery in his profession. His opinions were often sought in counsel. He was very remarkable in encouraging the younger members of the profession, always trying to cheer and build them up when meeting them in consultations, especially those in whom he discovered true metal and honesty of purpose. He had no selfish motives in anything, apparently trying to help others more than himself.

He was a strict observer of medical ethics, and was remarkably delighted with visits from his professional brethren; was very companionable and fond of company, instructive in conversation, and inclined to be lively; was generally cheerful with his patients, believing the proverb, that "a merry heart doeth good like a medicine."

He was well informed and kept himself "read up" in medical and the current literature of the day to the close of his life.

He courted no fame or popularity; yet among his professional brethren he was appreciated, and most highly esteemed; and the recollection of his useful and exemplary life, will long be fragrant in their memories.

But still, above his services as a physician and citizen, his memory is surrounded by the brighter halo of his Christian character.

Amid the most ceaseless labors of his profession and multiform duties and interests for his family and the public, he always found time to serve his God. For the last thirty years of his life a most exemplary professing Christian; and for the last decade a ruling elder in the Presbyterian Church. A man who, amid all the scenes of

danger, whether imminent or not, came to the bedside of the sufferer. The counsel of the goodly man, with a heart and countenance full of hope and cheer, encouraging his patients to recovery; or, if he must pass the "bourne from which no traveler ever returns," before "ever the silver cord be loosed, or the golden bowl be broken," was he ready to remind the traveler of the spirit's remedy, and call to their aid the Great Physician of souls. A man who, whether at the bedside of the suffering, at his home, or amid the multitude, preached alike to all with an exemplary life of Christian love, and trust, and cheerfulness.

Perhaps nowhere could his Chistian character be so manifest, and so fully realized, as in his family and in the church, with which he was connected.

By the former his memory is revered as it only can be, in a home deprived of one of the wisest and best of husbands and fathers.

In the latter, a former pastor, Rev. Mr. Jewel, on hearing of his decease, in writing to the bereaved family, says: "How vividly it brought to my mind the vacancy that would be felt in the prayer circle. He was of the *very few* faithful ones always in his place."

His last pastor, Rev. J. B. Morse, and who officiated at his funeral, says: * * * "I knew him a little less than two years, but so transparent was his character, that in that time I saw every phase and learned to respect and honor him for his intelligent, open frankness, and love him as a Christian and neighbor. * * *

"As an officer in the church he was faithful to his trust. He was always in his place, often when his health might have excused him. Whatever the weather, or whoever else might be absent, we were always sure of finding him at the prayer meeting. He always took part; his prayers were always fresh; the story of his experience always new; he prayed like a man who prayed elsewhere; he told his experience like a man who had an experience to tell; he confessed his faith in a Redeemer like a man who believed it, and tried daily to live as he professed. The last year of his life was his best. Though his bodily powers failed, yet the graces of the Spirit put forth new vigor and controlling influence. I never saw any Christian grow faster in grace. God seemed to ripen him for the harvest. His favorite hymn was that commencing—

"Come thou fount of every blessing."

And his favorite lines—

"Oh, to grace how great a debtor," etc.

and, as we strike that beautiful hymn, every one thinks of the voice that is silent on earth, and the warm, Christian heart that beats no longer.

He has gone from us, but has left us a legacy; the memory of his consistent Christian walk is a tower of strength. The influence of his prayers lingers about the altars of God like an invisible but pervading and sweet incense. I but interpret the hearts of all who knew him when I speak of him in the hightest terms, and call him a Christian gentleman. The community have lost in him a noble citizen, a good physician; the church a worthy Christian and able supporter.

"A good man has fallen to-day,
A husband, father, and friend,
A physician, beloved by us all,
Upon whom shall his mantle descend?"
—[*From lines written by Mrs. A. V. Ide, on the death of Dr. Burdick.*

His habits of punctuality and deep interest in religious matters are no more marked than they had been, through life, in his profession. Perseverence was his characteristic in everything he undertook; but, for the past eight years, partially from increased bodily infirmities, and because he could let fall into the care of his son, Dr. D. W. Burdick, the heavier burdens of his profession, was he able and glad to bring to the house of God some of those characteristics of punctuality and zest, as a Christian, that had so eminently marked his career as a physician.

Yet he maintained his interest in the profession, read his medical literature, and continued business to some extent, until September, 1869, which and the following month of October he spent in traveling in the western part of the country. It was by exposures during this journey that he added to his previous trouble of deficiency of breath, on taking active exercise, a troublesome cough, which continued to increase after his arrival home; and by the first of February following (1870) he was confined to the house, and most of the time unable to lie down, sleeping in the erect posture, and suffering terribly at times with paroxysms of dyspnœa. He had all the physical signs of hypertrophy of the heart, valvular lesions, pulmonary congestion, hydrothorax, and general anasarca; the areolar tissues of the extremities terribly swollen, and lower limbs ulcerated.

He was attended during his last illness by his son, Dr. D. W. Burdick, and Drs. F. Hyde, G. W. Bradford, C. Green, and Miles Goodyear, the latter of whom, a nobleman in the profession, and then oldest member of Cortland County Medical Society, after a brief illness, preceded him to the tomb.

He did not expect a cure at the hands of his medical friends and attendants, but, amid his great sufferings, he was very thankful for the temporary relief which occasionally they were able to afford him.

He always expressed himself as willing and ready to die, and could leave this world feeling that he had never knowingly or willfully wronged any person.

After about eight weeks of the most intense suffering, which was borne throughout with the same evenness of temper and Christian fortitude that had ever characterized him, in the triumphs of living faith he died, on the 28th day of March, 1870.

His funeral was attended March 30th, at the Presbyterian church, by a great concourse of people from the village and surrounding country and from distant towns, who were present to offer respect in these last rites to the departed and sympathy with the afflicted.

The pulpit was draped in black and an evergreen wreath, which, united, gave expression of the heart's grief and the "hope of immortality which yet cheered the dark hour."

An able and instructive discourse was delivered by the pastor, Rev. J. B. Morse.

The body was borne by six physicians and two elders of the church, and, after services, deposited in the beautiful rural cemetery at Preble.

At a meeting of members of Cortland County Medical Society, present on the occasion, suitable resolutions were passed commemorative of the services and virtues of their deceased brother.

Thus lived and passed from life this good man.

"So may thy name be reverenced; thou wert one
Of those whose virtues link us to our kind
By our best sympathies; thy day is done,
But its twilight lingers still behind,
In thy pure memory; and we bless thee yet,
For the example fair thou hast before us set."

ARTICLE XXXIII.

A Memoir of ALEXANDER THOMPSON, M. D. By FREDERICK HYDE, M. D.

A review of the history of the New York State Medical Society, furnishes no more commendable feature than its fitting tributes to its honored dead. The events of an inscrutable Providence, which often sunders its membership, would be viewed as a loss or calamity merely, was there not some consideration, if not an equivalent, in a retrospect full of solacing memories. Coming along down through our annals of more than sixty years, we see it often written that such an one of our number departed at such a time. In the same account, before we are aware of it, our attention becomes so wrapt in the contemplation of their lives and labors, so full of valuable results to the vocation they loved and honored, that we can scarcely feel that they are not with us. They speak to us to-day in language of clearest interpretation, though many of them have been long since gathered to their better rest.

Of him, who is the subject of this memorial paper, it may be truthfully said, but for his vacant seat in this assembly, he still lives. Who of us that knew him is not moved, warmed even in all his better being as he remembers so vividly the admirable traits of character, and estimates the choice combination of qualities, so liberally lavished on the person of Dr. Alexander Thompson? He was born May 2d, 1809, at Cambridge, Washington county, New York. His father, John Thompson, M. D., of Scottish lineage, removed to Scipio, Cayuga county, at an early day, where, for a long period he practiced his profession with ability; a gentleman distinguished for his uprightness of character; honoring all positions of trust conferred upon him by his fellow citizens. His son, Alexander, received his preliminary education in the Cayuga Lake Academy, at Aurora, and subsequently entered Union College, graduating at twenty years of age, when this Institution was in its meridian prosperity, under the presidency of Dr. Nott.

He commenced the study of medicine with his father, but afterward became the pupil of the late Dr. John B. Beck, of New York.

What better fortune could have come to our ardent pupil than the preceptorship of the learned Beck? What more pleasurable labor to

this distinguished savan than to direct the quick perceptive powers of his pupil, Thompson? In the written history of this Society, what names more revered than the Becks? What can better embellish its archives, and more fittingly adorn the medical profession, than their recorded labors? He was in New York during the memorable cholera year of 1832, seeking every opportunity to observe, with his usual care, the phenomenæ of this disease, and the results of remedial measures. Thus early did he evince that true professional zeal, which fearlessly encounters the deadliest pestilence, as readily and cheerfully as the milder innocuous malady, only that his holy mission to relieve suffering and save life bids him go.

He attended medical lectures at the College of Physicians and Surgeons, in New York, for four years, receiving his degree of Doctor of Medicine, and in 1833, he returned to Aurora and entered upon the practice of his profession in the same year, which he pursued with few intervals, except while in Europe, until his death on the evening of the 21st of September, 1869. He continued to cultivate the medical and kindred sciences with a truly scholarly zeal; he fitly representing a learned profession. Fond as he was of the collateral sciences, and achieving much in other fields of knowledge, he, at no period of his useful life, abated in the least his ardor and love for all that was solid and useful in medicine and surgery. While his physical organization bore upon it the impress of frailty, yet united as it was with so much of mental power, it proved to be capable of extraordinary endurance.

A little beyond the meridian of his years, his health failing him, as he thought, from over-work, he declined to engage in the general practice of his profession. But he soon learned, to use his own language, "that he could not survive the leisure he had sought," so at once returned to the labors of his practice. The writer remembers well the delight with which he recounted this experience, declaring that his measure of enjoyment was never fuller than when in the discharge of urgent duties. His familiarity with medical and surgical lore, qualified him to meet promptly and successfully the emergencies so often occurring in the practice of medicine and surgery. Never did his eminent qualifications appear to more advantage than when investigating complicated examples of disease difficult of diagnosis. Here it was, unconsciously to himself, that he made his associates feel the power of his disciplined mind. A professional neighbor says of Dr. Thompson "that he seldom solicited consultations, assuming all responsibility in extreme and severe cases.

He was industrious and an indefatigable scholar, possessing a good and retentive memory; he kept pace with the advance of his profession. He was a sound, judicious, and discriminating physician, and his opinions were generally given with much ability. In his professional intercourse he was always an uncompromising advocate for the dignity and honor of his calling, and ever ready to bring forward measures to purify its character and elevate its position."

He loved his profession, he studied it with an increasing fondness, and while he revered it, he never was obtrusive. A distinguished friend writes: "His mind was a depository, improved, cultivated, strengthened, enlarged, that he had an earnest bona fide love of learning; sought it, rejoiced in it, and never appeared so well as when in the society of those who made him feel that they could impart and receive. He incessantly and fearlessly championed the place and integrity of his profession."

Concentrating so much of earnest, wise, prudent purpose in the prosecution of his calling, it would have been strange indeed if he had failed of giving lustre to his labors, or of receiving honors from a society and profession he enjoyed so well, ornamented so richly, and served with such unceasing fidelity. He was a firm believer in the power for good of a well organized medical profession, and no one labored more earnestly for the promotion of this object. The physicians of his own county gratefully remember his efforts made to revive their Society, which unfortunately had been allowed to well nigh lose its organization. Hopefully did he speak of the local interest of the profession, as he saw the associate power of his County Medical Society returning. He sacredly observed the ethical authority of the medical profession. Dr. Thompson was elected a permanent member of this Society in February, 1845. At its annual meeting held February 5th, 1850, the Society conferred upon him the honor of its Presidency, he having held the office of Vice-President the preceding year.

The value and character of his services are amply shown in the records of the Society, and his surviving brethren who knew him and had felt the good qualities of his heart can think of him with only fragrant memories. His alliance with this society grew firmer and firmer with its growth and prosperity, and his love and respect for its brotherhood.

He attended its meetings punctually, discharging all duties imposed upon him cheerfully and efficiently. Himself and the lamented Brinsmade were appointed delegates by this Society to the universal

exposition in Paris. This meeting they attended, Dr. Brinsmade making the report to this Society the following year, Dr. Thompson remaining in Europe. At this world's gathering, Dr. Thompson was also of the commissioned representatives of the New York State Agricultural Society. His biographer before the latter society says: "Those of us who knew Dr. Thompson may well believe that, of all those who, at that great gathering of art in all its branches, represented New York, his examination was one of the most intelligent, for his range of acquisition was such as to lend to him facile assistance in general as in minute survey. He resided for several months in Paris, and brought to the review of the exposition, spectacle as it was, that characteristic, resistless energy which too often made his very pleasures and studies a severe draft on his vital energies. In Europe he pursued, with great diligence, his examination of the specialty which the society had, for so many years, in a committee organization (celebrated for its perseverance and permanence), intrusted to him and his cherished associates, Gov. John A. King and Hon. Lewis F. Allen. This was vine culture, the vine product; and the last public act of his public life was to continue, at Elmira, at the State fair just closed, these valuable inquiries; the committee changed only by the intelligent son of Gov. King filling the place his father's most lamented decease vacated. Dr. Thompson personally visited the great vineyards of Europe, and in their localities saw and studied the richness and culture of the vines whose fame all the world recognizes. It is matter of great regret that he did not live to prepare a report at length; a record of the gathered information of so many years; the fruits of such well-used opportunity. The annals of our Society very wisely include memorials of those who have given it such faithful and such scientific service. Our members are gathered for a great good, separated from the ordinary motives of gain and reward, with the high motive of advancing the greatest good of the people, not a class only, but all; and in this, Dr. Thompson bore his share of action. All our older associates will recognize, as an act of justice, that we should manifest thus our regret. Art and education and science have lost in him a zealous disciple; and there are those among us who, for many a year, will keep alive their memories of the lessons he imparted. It is something to have one's name rise to quick recollection as the earth renews its floral glories, as the order in earth's work develops her beauty; and in the grateful remembrances of associate service to culture, Dr. Alexander Thompson's name will have lasting record."

He visited Europe twice, first in 1857, with the purpose of direct-

ing his observations in the best way to secure further attainments in the medical sciences. Already distinguished for his professional accomplishments, he was fitly prepared to estimate the value of all scientific facilities. Associating so freely as he did with the living masters in medicine and surgery; visiting extensively their medical schools and hospitals, he became still more in love with his profession and its achievements. Appreciating fully his foreign opportunities for professional observations, he could not concede that it was necessary for medical scholars to leave America to attend transatlantic schools and hospitals for any superior advantages they could furnish. While abroad, in the intervals of rest from his researches in the medical sciences, he gave his attention to other themes of study. With his ardent love for the study of science, he was a lover of art. The eminent writer from whom we have already drawn says, "he greatly enjoyed himself in art. Over a picture or some work of elaborate skill, he would act as the epicure at a feast."

He had the great good sense (and good fortune) to go to Manchester, where all, or a great part of the best pictures of England were gathered; and in his subsequent visit abroad, he made his way to all that was most glorious in Europe's power of beauty."

In 1868, he made his second visit to Europe. The honored representative from two important scientific bodies of his own State, as already named, he abated no effort to discharge faithfully the duties with which he had been commissioned from these respective societies. Many of the fields of medical learning which he had examined on his former tour, did he now review with his usual scrutiny, besides extensive observations derived from other sources of scientific learning. If the agricultural sciences have suffered so great a loss from his early departure, before he had put fully upon record his observations, how shall our Society find terms expressive of its regret that he can no longer impart to us of the rare treasures of learning from a mind so richly laden?

Dr. Thompson was twice married. First to Eliza, daughter of Eleaser Burnham, of Aurora, N. Y. His second marriage was to Mary L., daughter of Lyman Root, Esq., of Albany, an accomplished lady, who still survives him, now residing in the city of Albany, the place of her early home. He left no children. It is the writer's pleasure to remember the deceased in his hospitable and loveliest of Lake Shore homes, at Aurora, surrounded by all the beauty and richness of rural scenery, which nature and art in their friendly rivalry could well achieve. The choicest flowers, made more beautiful still

by contrast with the rarest shrubs and trees which so richly ornamented and hemmed in that home, not less than the trophies of culture within its walls, were a true commentary upon the tastes of him, whose head and hand had so skillfully and happily directed in their development.

It is rare that medical scholars, so devoted to the great interests of the medical profession as him of whom we write, should have achieved so much in the art of landscape. In the best of his days he became opulent, and it gave him great facility of culture.

If he received his first inspirations from Homer, Juvenal, Virgil, Milton, and Cowper, as he felt the power of their delightful themes drawn from rural life, we find him later yet, lingering over Dr. Falconer's History of the Gardens of Antiquity. Coming down to our own times, he was none the less interested in the horticultural history of Great Britain. He loved to speak of the labors of one of his own profession, Dr. Andrew Duncan, Professor of the Institutes of Medicine in the University of Edinburgh, an efficient agent in the formation of the Caledonian Horticultural Society. But how familiar this subject was to him, was shown in his animated discussion of topics related to it.

He never indulged in speculative theories. He was a lover of botany, and his accurate knowledge of chemistry qualified him to conduct his horticultural labors with great profit.

None who ever visited his beautiful grounds spread around his dwelling, looked upon their productions, tasted their delicious fruitage, luxuriated amid the floral perfumes, will ever doubt the practical skill of him, whose learning had made nature more prolific, more beautiful. It is doubtful if any private medical office in the city or country afforded more attractions for physicians than Dr. Thompson's. Remote from any public street, it stood nearly midway directly over the lake, surrounded by trees of richest foliage, terraced earth, and spreading lawn, overlooking the clear waters of the Cayuga, in which was mirrored the grand scenery of her shores. When one came within its portals observed its orderly plan for comfort, its abundant facilities for the study of science and art, he could little believe it the student's home.

Here it was that an interview with him, who devised this charming, this inspiring resort, furnished the evidence of his scholarly enthusiasm.

In the intervals of practice he enjoyed here his books; his flowers, shielded from the severe blast in winter, and opening gently

to the sun, were plainly visible from this retreat, but all was harmonious. With him, love of his profession was not overshadowed by his love of art and varied knowledge, but enriched by it. While others sought amusement or relaxation by questionable means from severer duties, his was of the purest kind, by a cultivation of the beautiful and useful.

Conscious of the nature of his disease, from which he suffered much, and that it could not be subdued, his friend remarks: "He resisted, by a strength of will, which, to all but the inevitable, was irresistible." He recognized in his last hours of suffering its progress, and was to himself physician.

Having prescribed for a patient in his office, he said he felt ill, and walked out of it with him, going toward the house; but the gentleman was obliged to assist him in entering, when he directed his wife to bring a volume descriptive of his disease, gave page where prescription would be found, which he took, remarking, there was no more to be done; and thus, in the midst of life, he was in death. Dr. Thompson was no more.

In addition to his official relations to the scientific societies already noticed, he was director of the banks of Auburn, of Geneva, and Aurora; trustee of the New York Agricultural College; also of Wells College.

Through the kindness of Dr. Willard, of Auburn, the following report of the autopsy of Dr. Thompson, made September 24th, 1869, was received. There existed extensive adhesions of the entire left lung, with an abscess at the top two inches in diameter; there was a small tuberculous mass at the top of the right lung; the pericardium and its contents were healthy; the liver was normal; the stomach contained a pound and a half of coagulated blood of dark color; an ulcer, with hardened edges, was discovered two and a half inches below, and posterior to the cardiac orifice, one inch in diameter, with edges firmly adherent to the spleen and pancreas; an indurated mass was found, including portions of the stomach, pancreas, and spleen, weighing three-fourths of a pound; an old cicatrice was seen on the inferior surface of the spleen, contiguous to its adhesions to the stomach; near this several small ulcers were found. The ulceration had opened the principal branch of the left gastric artery, which, through its anastomosis with the splenic and hepatic arteries, caused an active and uncontrollable hemorrhage of sufficent amount to produce death in a few hours. The indurated structure upon a microscopic examination was found to contain numerous cancer cells.

ARTICLE XXXIV.

List of Honorary Members of the Medical Society of the State of New York.

[The election of Honorary Members is authorized by statute. The Society, in its by-laws, after declaring that certain individuals shall be Honorary Members, by virtue of their present or previous offices, have directed that only two Honorary Members shall be annually elected, having been nominated at least a year previous.]

On motion of Dr. Staats, it was

Resolved, To elect to honorary membership non-residents of the State of New York.

By Dr. B. Fordyce Barker:

Resolved, That section fifteen of the by-laws be amended in accordance with the report of the committee, striking out the word *two* and inserting the word *six*, so as to elect not more than six Honorary Members yearly.

[Transactions 1859, page 412.]

		Elected February.
Drs.	* Benj. Rush, Philadelphia. Obiit 1813. Æt. 68	1808
	* Nathan Smith, New Haven. Obiit 1829. Æt. 67....	1808
	* John Pomeroy, Burlington, Vermont.....	1808
	* John Miller, Cort., N. Y. Obiit March 30, 1862. Æt. 87	1808
	* Moses Willard, N. Y. Obiit Dec. 6, 1826. Æt. 66...	1808
	* John Warren, Boston. Obiit April 4, 1815. Æt. 62..	1810
Rev.	* Alexander Proudfit, Salem, New York	1810
Drs.	* Samuel L. Mitchell, N. Y. Obiit Sept. 7, 1831. Æt. 67,	1811
	* David Hosack, N. Y. Obiit Dec. 22, 1835. Æt. 67..	1811
	* Nicholas Romayne, N. Y. Obiit 1817. Æt. 61.....	1812
	* John Stearns, New York. Obiit 1849. Æt. 78	1812
	* Lyman Spaulding, New York. Obiit Oct. 31, 1821. Æt. 46	1819
	* George C. Shattuck, Boston. Obiit March 18, 1854...	1819
	* James Hadley, Buffalo, New York. Obiit July, 1869. Æt. 84	1817
	* John Murray, Edinburgh	1817
	* Wright Post, N. Y. Obiit June 14, 1828. Æt. 61...	1819
	* John C. Warren, Boston. Obiit May 4, 1856. Æt. 78	1819

* Deceased.

		Elected February.
Drs.	* Valentine Mott, New York. Obiit April 26, 1865. Æt. 79	1820
	* Josiah Noyes, New York	1823
	* Nathaniel Chapman, Philadelphia. Obiit July 1, 1853. Æt. 73	1823
	* Dan'l Drake, Cincinnati. Obiit Nov. 6, 1852. Æt. 67,	1824
	* John D. Henry, Rochester, New York	1824
	* Philip S. Physick, Philadelphia. Obiit Dec. 15, 1837. Æt. 70	1825
	* Joseph Gallup, Burlington, Vt. Obiit Oct., 1849. Æt. 81	1825
	* John Lovell, Wash., D. C. Obiit Oct. 17, 1836	1827
	* John Onderdonk, New York	1827
	John Lizars, Edinburgh	1828
	* Wm. Hammersly, New York. Obiit 1833	1828
	* Samuel White, Hudson, N. Y. Obiit 1845. Æt. 68	1829
	* J. Augustine Smith, Virginia	1829
	* Eli Ives, Connecticut. Obiit 1861. Æt. 83	1830
	John W. Gloninger, Lebanon, Pennsylvania	1830
	* George McClellan, Philadelphia. Obiit May 8, 1847. Æt. 51	1831
	* Eli Todd, Connecticut. Obiit Nov. 17, 1833. Æt. 64,	1831
	* Thomas C. James, Philadelphia. Obiit July 25, 1835. Æt. 69	1832
	* Thomas W. Henry, Kings county, N. Y	1832
	* Reuben D. Mussey, Ohio. Obiit June 21, 1866. Æt. 86,	1833
	Walter Channing, Boston, Massachusetts	1833
	* James Conquest Cross, Kentucky	1834
	* Alfred T. Magill, Virginia	1834
	* Samuel Jackson, Philadelphia	1835
	* John Eberle, Ohio. Obiit Feb. 2, 1838. Æt. 50	1835
	* Robley Dunglison, Phila. Obiit April, 1869	1836
	* Thomas Sewall, Washington, D. C. Obiit 1845	1836
	* Luther V. Bell, Mass. Obiit Feb. 11, 1862. Æt. 55	1837
	* Charles D. Meigs, Pennsylvania. Obiit 1869	1837
	* Daniel Oliver, New Hampshire. Obiit 1842. Æt. 56,	1838
	* William Tully, Connecticut. Obiit 1859. Æt. 74	1838
	Jacob Bigelow, Boston, Massachusetts	1839
	* Jonathan Knight, New Haven, Conn. Obiit 1864	1839

* Deceased.

		Elected February.
Drs.	Placido Portal, Palermo	1840
	George B. Wood, Philadelphia	1840
	Hugh L. Hodge, Pennsylvania	1841
	* Benjamin W. Dudley, Lexington, Ky. Obiit Jan. 20, 1870	1841
	Jerome V. C. Smith, New York city	1842
	Isaac Hayes, Philadelphia, Penn	1842
	* Enoch Hale, Boston. Obiit 1848	1843
	Willard Parker, New York	1843
	* Amariah Brigham, N. Y. Obiit Sept. 9, 1849. Æt. 50,	1844
	* John S. Peters, Connecticut	1844
	* Lewis C. Beck, N. J. Obiit April 20, 1853. Æt. 55	1845
	* Landon C. Rives, Cincinnati, Ohio. Obiit June 3, 1870,	1845
	* Mat. Stevenson, Newburgh, Orange county, N. Y	1846
	* Alexander H. Stevens, New York. Obiit March 30, 1869	1846
	* Seth Hastings, Oneida county, N. Y	1847
	* Henry H. Childs, Pittsfield, Mass. Obiit March 22, 1868. Æt. 84	1847
	Woodbridge Strong, Boston, Mass	1848
	Frederic May, Washington, D. C	1848
	Alonzo Clark, N. Y	1849
	* Joseph Parish, Philadelphia. Obiit March 18, 1840. Æt. 61	1849
	* Stephen Mosher, Cincinnati	1851
	George W. Norris, Philadelphia	1852
	Samuel S. Purple, New York	1852
	Abraham Sagar, Michigan	1853
	* John W. Francis, New York. Obiit 1861. Æt. 71	1853
	* John P. Bachelder, New York. Obiit April 7, 1868	1854
	Henry L. Sabin, Williamstown, Mass	1854
	* Marshall Hall, London	1855
	Horace A. Buttolph, New Jersey	1855
	Samuel D. Gross, Philadelphia	1856
	* Chas. Hooker, New Haven, Ct. Obiit March 19, 1863. Æt. 61	1856
	John Rolph, Toronto, C. W	1857
	Henry Julian Hunter, Sheffield, Eng	1857
	* Marshal S. Perry, Boston	1858

* Deceased.

		Elected February.
Drs.	Samuel Henry Dickson, Charleston, S. C.	1858
	Silas Durkee, Boston	1859
	* John De La Mater, Cleveland, O. Obiit March 28, 1867,	1859
	Alfred Stille, Philadelphia	1860
	George Mendenhall, Cincinnati, O.	1860
	* J. Mason Warren, Boston. Obiit Aug. 19, 1867. Æt. 56,	1860
	Warren Stone, New Orleans, La.	1860
	Ernest Hart, London, Eng.	1860
	Benjamin Hopkins Catlin, Meriden, Ct.	1860
	James R. Wood, New York	1861
	Zina Pitcher, Detroit, Michigan	1861
	Dixi Crosby, Hanover, New Hampshire	1861
	Pliny A. Jewett, New Haven, Conn.	1861
	D. Humphreys Storer, Boston, Mass.	1861
	W. Fraser, Montreal, Canada West	1861
	* T. G. Geoghegan, Dublin. Obiit December, 1869	1862
	Ashbel Woodward, Franklin, Conn.	1862
	John Jeffries, Boston	1862
	William Carpenter, London	1862
	Henry Bronson, New Haven, Conn.	1862
	John M. Cuyler, U. S. Army	1863
	W. Braithwait, London	1863
	Thomas Jennings, Nashville, Tenn	1863
	Pinckney Webster Ellsworth, Hartford, Conn.	1863
	R. S. Satterlee, U. S. Army	1863
	Samuel W. Butler, Philadelphia	1863
	William W. Rutherford, Harrisburg, Penn.	1864
	James Adams Allen, Michigan	1864
	Oliver P. Hubbard, Hanover, N. H.	1864
	William J. Sloan, U. S. Army	1864
	Stephen Wickes, Orange, New Jersey	1864
	* James Couper, Newcastle, Del. Obiit Aug., 1865	1864
	* Wilson Jewell, Philadelphia. Obiit Nov. 4, 1867. Æt. 67	1865
	Josiah G. Beckwith, Litchfield, Conn.	1865
	* Lyndon A. Smith, Newark, N. J. Obiit Dec. 15, 1865,	1865
	* Charles S. Tripler, U. S. A. Obiit Oct. 20, 1866	1865
	* Charles A. Pope, St. Louis, Mo. Obiit July 5, 1870	1865
	Abraham B. Palmer, Ann Arbor, Michigan	1865

* Deceased.

		Elected February.
Drs.	Samuel W. Thayer, Burlington, Vt.	1866
	N. S. Davis, Chicago, Ill.	1866
	Albert Smith, Peterborough, N. H.	1866
	C. E. Brown Séquard, Cambridge, Mass.	1867
	Middleton Goldsmith, Louisville, Ky.	1867
	* N. D. Benedict, St. Augustine, Florida.	1868
	Joseph K. Barnes, Surgeon-General U. S. A.	1868
	Isaac Ray, Providence, R. I.	1868
	Thomas S. Kirkbride, Philadelphia.	1868
	* Sir James Y. Simpson, Scotland. Obiit May 8, 1870. Æt. 59	1869
	Theodore R. Varick, Jersey City	1869
	Henry S. West, Asia Minor.	1870
	Ralph Isham, Chicago.	1870
	Joseph Carsen, Philadelphia	1870
	Wm. Henry Thayer, Keene, N. H.	1870
	Wm. Warren Greene, Portland, Me.	1870
	H. M. Knight, Lakeville, Conn.	1870
	Wm. H. Byford, Chicago, Ill.	1871
	Edwin M. Snow, Providence, R. I.	1871
	Wilmer Worthington, Westchester, Pa.	1871
	William McCullom, Woodstock, Vt.	1871
	John H. Webb, Galveston, Texas.	1871
	E. K. Hunt, Hartford, Conn.	1871

* Deceased.

ARTICLE XXXV.

List of Permanent Members.

[*Statute passed February* 6, 1845. It shall and may be lawful for the Medical Society to elect annually, such a number of permanent members as they may from time to time determine by their by-laws, not to exceed two annually from any one senatorial district.]

Resolution adopted by the State Medical Society, February 5, 1845:

Resolved, That this meeting shall not elect, annually, more than one permanent member from each senatorial district in this State, and after the close of this session no person shall be elected a permanent member until the last year of his term as delegate, or shall have resigned his place as such, or shall have been recommended by a county medical society.

By Dr. Hun, to amend resolution of 1845, so as to elect two permanent members, annually, from each senatorial district, this resolution having been passed at a previous meeting, but having failed of being recorded, the amendment was adopted. (1854.)

Resolved, That in case of the death of a member of this society, it shall be the duty of the nearest censor in the district in which he resided, to transmit to the secretary a professional obituary, of suitable length, for publication in the transactions of the society.

Resolved, That it shall be the duty of the secretary to cause to be published in the yearly transactions of this society, a list of living members thereof, with the above resolution appended thereto, and at each meeting to call the roll of members, and if any are reported as having died during the year, the presiding officer shall appoint some member to perform the above duty. (Trans. 1849, p. 93.)

Names.	County.	Year.
Drs. * NICHOLAS ROMAYNE, Obiit 1817. Æt. 67	New York..	1813
* Samuel Bard, Obiit May 24, 1821. Æt. 80	.....	1813
* William Wilson, Obiit 1829	Columbia....	1814
* JOHN STEARNS, Obiit 1849. Æt. 75	Albany	1814
* Charles D. Townsend, Obiit Dec. 19, 1847. Æt. 69	.....	1815
* John Ely	.....	1815

* Deceased. [I shall be obliged to any person who will forward to me information of the place of residence of any permanent or honorary member not now recorded; and the age and time of death of any deceased member, or person who has received the honorary degree on recommendation of this society.—W. H. BAILEY, Secretary, Albany.]

	Names.	County.	Year.
Drs.	* Westel Willoughby, Obiit Oct. 3, 1844. Æt. 75	.....	1816
	* David Hosack, Obiit 1835. Æt. 67	.....	1816
	* Samuel L. Mitchill, Obiit Sept. 7, 1831. Æt. 67	New York..	1817
	* T. Romeyn Beck, Obiit Nov. 19, 1855. Æt. 64	Albany	1817
	* Joseph White, Obiit June 2, 1832. Æt. 70	Otsego	1818
	* Cornelius E. Depew, Obiit 1822	.....	1818
	* William Bay, Obiit Sept. 7, 1865. Æt. 91	Albany	1819
	* Lyman Spaulding,	.....	1819
	* Felix Pascalis, Obiit July 27, 1833. Æt. 71	.....	1820
	* Amos G. Hull	.....	1820
	* Charles Drake, Obiit 1835	New York..	1821
	* Peter Wendell, Obiit Oct. 31, 1849. Æt. 63	Albany	1821
	* Jas. R. Manly, Obiit 1851. Æt. 69	New York..	1822
	* Alex. Coventry, Obiit 1831. Æt. 65	Oneida.....	1822
	* Luther Guiteau, Obiit 1850.	.....	1823
	* Thomas Broadhead, Obiit 1830. Æt. 65	.....	1823
	* John H. Steele	Saratoga ...	1824
	* Laurens Hull, Obiit June 27, 1865. Æt. 86,	Alleghany..	1824
	* Jonathan Eights, Obiit Aug. 10, 1848. Æt. 75	.....	1825
	* Henry Mitchell, Obiit Jan. 12, 1856. Æt. 72	.....	1825
	* John Watts, Jr., Obiit February 4, 1831. Æt. 45	.....	1826
	* Daniel Ayers, Obiit May 25, 1853. Æt. 66	.....	1826
	* John Cheeseman, Obiit Oct. 11, 1862. Æt. 75	N. Y. city..	1827
	* Platt Williams, Alder Creek	Oneida.....	1828
	* Richard Pennel, Obiit April 11, 1861. Æt. 62	N. Y. city..	1828
	* John B. Beck, Obiit April 9, 1851. Æt. 56	.....	1829
	* H. W. Doolittle, Obiit 1853. Æt. 64	.....	1829

* Deceased

	Names.	County.	Year.
Drs.	* Moses Hale, Obiit Jan. 3, 1837. Æt. 57	.....	1830
	* Alpheus S. Greene	.....	1830
	Edward G. Ludlow, Yonkers.....	.....	1831
	James McNaughton, Albany.....	Albany	1831
	* Joel A. Wing, Obiit Sept. 6, 1852. Æt. 64.	Albany	1832
	Joel Foster, New York city.....	New York..	1832
	John G. Morgan, St. Louis	.....	1833
	* Samuel White, Obiit 1845. Æt. 68....	Columbia ..	1833
	* William Taylor, Obiit September, 1865 Æt. 74.....	Onondaga ..	1834
	* William Horton, Jr.....	.....	1834
	* Thos. Spencer, Obiit May 30, 1857. Æt. 65	.....	1835
	* Samuel McClellan, Obiit April 8, 1855. Æt. 68	.....	1835
	* Sumner Ely, Obiit Feb. 3, 1857. Æt. 70,	Otsego	1836
	* Robert G. Frary, Hudson, Obiit Dec. 29, 1862. Æt. —	Columbia ..	1836
	* Bryant Burwell, Buffalo.....	Erie	1837
	* Calvin W. Smith.....	.....	1837
	* A. G. Benedict, Red Hook, Obiit Oct. 4, 1862. Æt. 72	Dutchess...	1838
	* John McCall, Utica, Obiit Oct. 6, 1867. Æt. 80	Oneida.....	1838
	* Phineas Hurd.....	.....	1839
	Eli Pearce.....	.....	1839
	* John McClelland, Obiit Oct. 18, 1855. Æt. 83	.....	1840
	Charles S. Goodrich	N. Y. city ..	1840
	Charles B. Coventry, Utica	Oneida.....	1841
	Peter Van O'Linda, Albany	Albany	1841
	* Chandler R. Gilman, New York city, Obiit Sept. 26, 1865. Æt. 63	.....	1842
	Lake I. Tefft, Syracuse.....	Onondaga ..	1842
	* Lester Green	.....	1843
	* E. B. Burroughs	.....	1843
	* John R. Rhinelander, Obiit May 8, 1857. Æt. 65	New York..	1844
	Henry Maxwell	.....	1844

* Deceased.

Names.	County.	Year.
Drs. * Thomas W. Blatchford, Troy, Obiit Jan. 7, 1866. Æt. 71	Rensselaer..	1845
* Augustus Willard, Greene, Obiit March, 1868. Æt. 69	Chenango ..	1845
Stephen H. Hasbrouck	.....	1845
* Merritt H. Cash, Obiit April 26, 1861. Æt. 59	.....	1845
Ferris Jacobs, Delhi	Delaware...	1845
* John R. Brown	.....	1845
Reuben Goodale	.....	1845
William D. Purple, Greene	Chenango ..	1845
* Alexander Thompson, Aurora, Obiit Sept. 28, 1869	Cayuga	1845
Charles Winne, Buffalo	Erie	1845
* Henry Van Hovenburgh, Obiit July 27, 1868. Æt. 77	Kingston ...	1846
James Fountain	.....	1846
John H. Wheeler, Athens	Greene.....	1846
* Simeon Snow, Obiit Sept. 20, 1865. Æt. 62	Montgomery	1846
Benjamin E. Bowen, Mexico	Oswego	1846
N. S. Davis, Chicago, Ill.	.....	1846
Harman Van Deusen	.....	1846
Maltby Strong, Rochester	Monroe	1846
Willard Parker, New York city	.....	1847
Edmund F. Grant	.....	1847
* Alden March, Albany, Obiit June 17, 1869. Æt. 73	Albany	1847
* Truman B. Hicks	.....	1847
* Thomas Goodsell, Utica, Obiit Jan. 12, 1864. Æt. 83	Oneida.....	1847
* Nelson Winton, Havana, Obiit Aug. 27, 1824. Æt. 64	Schuyler ...	1847
George W. Bradford, Homer	Cortland ...	1847
* Alden S. Sprague, Obiit January 8, 1863. Æt. 62	.....	1847
Richard A. Varick, Poughkeepsie	Dutchess ..	1848
Peter Van Buren, New York city	.....	1848
* Wm. S. Norton, Ft. Edward, Obiit Feb. 20, 1863	Washington	1848

* Deceased.

	Names.	County.	Year.
Drs.	Jenks S. Sprague, Cooperstown	Otsego	1848
	Denison R. Pearl		1848
	* J. Edwin Hawley, Obiit August 1, 1859. Æt. 57		1848
	* Alexander H. Stephens, New York city, Obiit March 30, 1869. Æt. 79		1848
	* John M. Pruyn, Kinderhook, Obiit February, 1866. Æt. 59	Columbia	1849
	Morgan Snyder, Fort Plain	Montgomery	1849
	* Patrick H. Hard		1849
	Dyer Loomis, New Berlin	Chenango	1849
	Enos Barnes		1849
	Alonzo Clark, N. Y. city		1850
	Nathaniel Miller		1850
	* Thomas C. Brinsmade, Troy, Obiit June, 1868. Æt. 66	Rensselaer	1850
	Hiram Corliss, Greenwich	Washington	1850
	Helon F. Noyes		1850
	S. H. French, Lisle	Broome	1850
	* Daniel T. Jones, Obiit March 29, 1861. Æt. 60	Onondaga	1850
	Seth H. Pratt		1850
	Barent P. Staats, Albany	Albany	1851
	Bartow White, Obiit December 11, 1862. Æt. 87	Dutchess	1851
	Orson M. Allaben, Margaretville	Delaware	1851
	Joseph White, Canajoharie	Montgomery	1851
	Daniel P. Thomas, Utica	Oneida	1851
	* Silas West, Obiit Aug. 27, 1859. Æt. 67	Broome	1851
	John E. Todd, Philadelphia, Pa		1851
	Frank H. Hamilton, New York city		1851
	James H. Armsby, Albany	Albany	1852
	Samuel Shumway, Essex	Essex	1852
	* Nicoll H. Dering, Utica, Obiit Dec. 19, 1867. Æt. 73	Oneida	1852
	* Royal Ross		1852
	Jehial Stearns, Pompey	Onondaga	1852
	Charles E. Ford		1852
	Benjamin Drake		1853

* Deceased.

	Names.	County.	Year.
Drs.	Joseph Bates, Lebanon Springs.....	Columbia...	1853
	A. Van Dyck, Oswego	Oswego	1853
	Phineas H. Burdick, Preble	Cortland ...	1853
	James M. Gardiner.....	.....	1853
	A. F. Doolittle, Herkimer.....	Herkimer ..	1853
	E. L. Hart, Elmira	Chemung ..	1853
	George N. Burwell, Buffalo.....	Erie	1853
	Thomas F. Cock, New York city	.....	1854
	* Wm. Rockwell, New York city, Obiit Dec. 30, 1868. Æt. 68.....	.....	1854
	Charles A. Lee, Peekskill.....	Westchester	1854
	* L. S. Turner, Fallsburgh, Obiit 1860. Æt. 49	Sullivan....	1854
	Thomas Hun, Albany.....	Albany	1854
	James Thorn, Troy.....	Rensselaer..	1854
	Oliver Brisbane	.....	1854
	* Henry Reynolds, Obiit Dec. 20, 1857. Æt. 68	.....	1854
	* Arba Blair, Rome, Obiit June 20, 1863. Æt. 82	Oneida	1854
	F. T. Maybury, Binghamton	Broome	1854
	* Azariah B. Shipman, Syracuse, Obiit Sept. 15, 1868. Æt. 65	.....	1854
	Frederick Hyde, Cortlandville	Cortland ...	1854
	J. R. Smith, Riga.....	Monroe	1854
	James P. White, Buffalo	Erie	1854
	George Burr, Binghamton.....	Broome	1854
	W. G. Sands, Oxford	Chenango ..	1854
	James R. Wood, New York city	New York..	1855
	B. Fordyce Barker, N. Y. city	.....	1855
	Philander Stewart, Peekskill.....	Westchester	1855
	G. C. Monell, Newburgh	Orange	1855
	Alfred Wotkyns, Troy	Rensselaer..	1855
	* Ebenezer Steele.....	.....	1855
	* Freeman Tourtelot, Middlegrove, Obiit Dec. 14, 1868. Æt. 62.....	Saratoga ...	1855
	Henry C. Gray, N. White Creek	Washington	1855
	Luther Guiteau, Trenton	Oneida.....	1855
	Augustus L. Saunders, Brookfield	Madison....	1855

* Deceased.

	Names.	County.	Year.
Drs.	Marcena Terry	.....	1855
	A. B. Case	.....	1855
	John Coventry	.....	1855
	* Edson Carr, Obiit 1861. Æt. 60	Ontario	1855
	Austin Flint, New York city	New York .	1855
	* John Coates, Batavia, Obiit Feb. 26, 1859. Æt. 64	Genesee....	1855
	* James L. Phelps, N. Y. city, Obiit 1869,	.....	1856
	* Horace Green, N. Y. city, Obiit Nov. 29, 1866	.....	1856
	D. C. Winfield, Middleton	Orange	1856
	* Howard Townsend, Albany, Obiit Jan. 15, 1867. Æt. 43	.....	1856
	Elbridge Simpson, Hudson	Columbia...	1856
	Jacob G. Snell, Amsterdam	Montgomery	1856
	Abram Haun, Little Falls	Herkimer ..	1856
	Daniel P. Bissell, Utica	Oneida.....	1856
	Peter McNaughton, Albany	Albany	1856
	John Gay Orton, Binghamton	Broome	1856
	* Jotham Purdy, Obiit August 11, 1858. Æt. 59	Chemung ..	1856
	James V. Kendall, Clay	Onondaga ..	1856
	J. P. Dunlap, Onondaga	Onondaga ..	1856
	* Fred. F. Backus, Obiit Nov. 4, 1858. Æt. 64	.....	1856
	E. W. Armstrong, Rochester	Monroe	1856
	Stephen Smith, New York	.....	1857
	Samuel Hart, Brooklyn	Kings	1857
	George J. Fisher, Sing Sing	Westchester	1857
	Wm. S. Preston, Patchogue	Suffolk.....	1857
	* C. V. W. Burton, Obiit Sept. 23, 1860. Æt. 51	Rensselaer..	1857
	* Mason F. Cogswell, Albany, Obiit Jan. 21, 1864. Æt. 54	Albany	1857
	James Diefendorf, Fort Plain	Montgomery	1857
	* A. Green, Paine's Hollow, Obiit 1862...	Herkimer ..	1857
	Gilson A. Dayton, Mexico	Oswego	1857
	M. M. Bagg, Utica	Oneida.....	1857
	* Levi Farr, Obiit July 18, 1859. Æt. 72..	Chenango ..	1857

* Deceased,

Names.	County.	Year.
Drs. J. C. Morse, Sabula, Iowa	.....	1857
* A. F. Oliver, Penn Yan, Obiit 1857. Æt. 65	Yates.....	1857
Jonathan Kneeland, South Onondaga	Onondaga ..	1857
Francis L. Harris	.....	1857
Sandford B. Hunt, Buffalo	Erie	1857
Ed. H. Parker, Poughkeepsie	Dutchess ...	1858
Nathaniel C. Husted, N. Y. city	.....	1858
William W. Strew, Oyster Bay	Queens	1858
William Govan, Stony Point	Rockland...	1858
* Sylvester D. Willard, Albany, Obiit April 2, 1865. Æt. 39	Albany	1858
* Edward Hall, Auburn, Obiit 1870	Cayuga	1858
William Tibbits, Mechanicsville	Saratoga ...	1858
Tabor B. Reynolds, Saratoga Springs	Saratoga ...	1858
Charles G. Bacon, Fulton	Oswego	1858
James M. Sturtevant, Rome	Oneida	1858
Seneca Beebe, McDonough	Chenango ..	1858
Alfred Bolter, Ovid	Seneca	1858
Caleb Green, Homer	Cortland ...	1858
Warren Fay, Pavillion	Genesee....	1858
W. Ellsworth	.....	1858
* Franklin Tuthill, San Francisco, Cal.	.....	1859
John Ball, Brooklyn	Kings.....	1859
Seth Shove, Katonah	Westchester	1859
Moses C. Hasbrouck, Nyack	Rockland...	1859
James P. Boyd, Albany	Albany	1859
Horace K. Willard, Catskill	Greene.....	1859
* Uriah Potter, Hallsville, Obiit Dec. 16, 1869. Æt. 60	Montgomery	1859
Richard L. Allen, Saratoga Springs	Saratoga ...	1859
Henry N. Porter, New York Mills	Oneida.....	1859
John Putnam, Madison	Madison....	1859
* C. Milford Crandell, Belfast, Obiit Oct. 4, 1867. Æt. 41	Allegany...	1859
* Stephen Hagadorn, Cohocton, Obiit Aug. 1, 1863. Æt. 52	Steuben....	1859
Alexander J. Dallas, Camillus	Onondaga ..	1859
John F. Trowbridge, Syracuse	Onondaga ..	1859
Phineas H. Strong, Buffalo	Erie	1859

* Deceased.

	Names.	County.	Year.
Drs.	Horace M. Conger, Buffalo	Erie	1859
	John H. Griscom, New York		1860
	Elisha Harris, New York		1860
	John Demarest, Spring Valley	Rockland	1860
	William P. Townsend, Goshen	Orange	1860
	S. Oakley Vanderpoel, Albany	Albany	1860
	William P. Seymour, Troy	Rensselaer	1860
	Darius Clark, Canton	St. Lawrence	1860
*	Benjamin Mooers, Plattsburgh	Clinton	1860
	V. W. Mason, Canastota	Madison	1860
*	Charles Barrows, Clinton, Obiit Oct. 2, 1870	Oneida	1860
	Pelatiah B. Brooks, Binghamton	Broome	1860
	James H. Jerome, Trumansburgh	Tompkins	1860
	M. M. Marsh, Manlius	Onondaga	1860
	Harvey Jewett, Canandaigua	Ontario	1860
*	C. H. Wilcox, Buffalo	Erie	1860
	Levant B. Cotes, Batavia	Genesee	1860
	John G. Adams, New York city		1861
	John McNulty, New York city		1861
	C. W. Haight, Pleasantville	Westchester	1861
	J. Foster Jenkins, Yonkers	Westchester	1861
	John V. P. Quackenbush, Albany	Albany	1861
	Reed B. Bontecou, Troy	Rensselaer	1861
*	James Lee, Mechanicsville, Obiit April 13, 1866. Æt. 47	Saratoga	1861
	A. E. Varney, Little Falls	Herkimer	1861
*	Franklin Evarts, Oswego, Obiit Feb. 12, 1864. Æt. 36	Oswego	1861
	Austin White, Parish	Oswego	1861
	Charles S. Wood, Greene	Chenango	1861
	C. M. Kingman, McGrawville	Cortland	1861
	Nelson Nivison, Hector	Schuyler	1861
	Joseph N. Northrop, Albany	Albany	1861
	Charles C. F. Gay, Buffalo	Erie	1861
	Edward R. Squibb, Brooklyn	Kings	1861
	E. R. Peaslee, New York city		1862
	Thomas C. Finnell, New York		1862
	Abraham Crispell, Rondout	Ulster	1862
	John D. Watkins, Liberty	Sullivan	1862

* Deceased.

	Names.	County.	Year.
Drs.	S. M. Van Alstyne, Richmondville	Schoharie	1862
	Samuel H. Freeman, Albany	Albany	1862
	Theo. L. Mason, Brooklyn	Kings	1862
	H. A. Carrington, New Haven, Conn.		1862
	S. V. Cobb, Rome	Oneida	1862
	A. G. Purdy, Oneida	Madison	1862
	* P. Brooks, Binghamton	Broome	1862
	E. S. Lyman, Sherburne	Chenango	1862
	Harvey B. Wilbur, Syracuse	Onondaga	1862
	Joseph Beattie, Geneva	Ontario	1862
	John Boardman, Buffalo	Erie	1862
	Charles E. Van Anden, Auburn	Cayuga	1862
	Henry T. Downs, New York city		1863
	Henry D. Buckley, New York city		1863
	Lewis F. Pelton, Mount Kisko	Westchester	1863
	John R. Cooper	Dutchess	1863
	Jacob Newkirk	Delaware	1863
	John Swinburne, Albany	Albany	1863
	James Ferguson, Glen's Falls	Warren	1863
	Alexander Ayers, Fort Plain	Montgomery	1863
	J. K. Chamberlayne, Utica	Oneida	1863
	Wm. H. H. Parkhurst, Frankfort	Herkimer	1863
	George Cook, Canandaigua	Ontario	1863
	C. V. Barnett, Windham Centre	Greene	1863
	Henry W. Dean, Rochester	Monroe	1863
	Douglas Bly, Rochester	Monroe	1863
	Josiah Rathbun, Utica	Oneida	1863
	* Hiram Adams, Fabius, Obiit March 9, 1865. Æt. 62	Oneida	1863
	Joseph C. Hutchison, Brooklyn	Kings	1864
	S. A. Purdy	New York	1864
	Peter Moulton, New Rochelle	Westchester	1864
	Charles McMillan, Fordham	Westchester	1864
	William H. Bailey, Albany	Albany	1864
	A. D. Hull, Lansingburgh	Rensselaer	1864
	* J. H. Reynolds, Obiit April 3, 1870. Æt. 42	Saratoga	1864
	H. S. Chubbuck, Elmira	Chemung	1864
	James S. Whaley, Rome	Oneida	1864
	Samuel G. Wolcott, Utica	Oneida	1864

* Deceased.

	Names.	County.	Year.
Drs.	William H. Fish, Mecklenburgh	Schuyler	1864
	E. M. Alba	Allegany	1864
	Samuel Avery, Baldwinsville	Onondaga	1864
	J. Towler, Geneva	Ontario	1864
	John Root, Batavia	Genesee	1864
	Solomon Barrett, Leroy	Genesee	1864
	Oliver White, New York		1865
	James M. Minor, Brooklyn		1865
	John W. Green, New York city		1865
	Edmund S. F. Arnold, Yonkers	Westchester	1865
	Peter P. Staats, Albany	Albany	1865
	John Ferguson, Albany	Albany	1865
	Griffin Sweet, Fairfield	Herkimer	1865
	Asa D. Hammond, Essex	Essex	1865
	John P. Gray, Utica	Oneida	1865
	Jacob Hunt, Utica	Oneida	1865
	Marcus M. Wood, Greene	Chenango	1865
	Uriah G. Bigelow, Albany	Albany	1865
	E. W. Bottum, Lyons	Wayne	1865
	Julien T. Williams, Dunkirk	Chautauqua	1865
	Isaac E. Taylor, New York city		1865
	Sanford Eastman, Buffalo	Erie	1865
	Guido Furman, New York city		1866
	A. N. Bell, Brooklyn		1866
	John Ordronaux, Roslyn	Queens	1866
	E. L. Beadle, Poughkeepsie	Dutchess	1866
	G. Botsford, Greenville	Greene	1866
	C. C. Covel, Stamford	Delaware	1866
	Thompson Burton, Fultonville	Montgomery	1866
	E. W. Howard, Warrensburgh	Warren	1866
	Isaac H. Douglass	Oneida	1866
	J. E. Casy, Mohawk	Herkimer	1866
	H. K. Bellows	Chenango	1866
	William H. Richardson, Westport	Essex	1866
	Israel Parsons, Marcellus	Onondaga	1866
	Samuel Gilmore	Cayuga	1866
	Lewis A. Sayre, New York city		1866
	* William F. Carter, Cohoes, Obiit April 20, 1866. Æt. 54	Albany	1866
	Jared Linsley, New York city		1867

* Deceased.

	Names.	County.	Year.
Drs.	Alfred Underhill, New York city	.....	1867
	William L. Appley, Cochecton	Sullivan	1867
	William C. Anderson, Stapleton	Richmond	1867
	Levi Moore, Albany	Albany	1867
	Henry B. Salmon, Stuyvesant Falls	Columbia	1867
	R. Blauwis, Fort Miller	Washington	1867
	Lyman Barton, Essex	Essex	1867
	H. S. Crandall, Leonardsville	Madison	1867
	Cornelius R. Agnew, New York city	.....	1867
	Devillo White, Sherburne	Chenango	1867
	Z. H. Blake, Dansville	Livingston	1867
	William Manlius Smith, Manlius	Onondaga	1867
	Darwin Colvin, Clyde	Wayne	1867
	H. H. Langworthy, Rochester	Monroe	1867
	C. C. Wyckoff, Buffalo	Erie	1867
*	William B. Bibbins, New York city	.....	1868
	Samuel T. Hubbard, New York city	.....	1868
	Clark A. Nicholson, Beekman	Dutchess	1868
	Lewis H. White, Fishkill	Dutchess	1868
	J. V. Lansing, Albany	Albany	1868
	J. R. Boulware, Albany	Albany	1868
	John P. Sharer, Little Falls	Herkimer	1868
	Israel I. Buckbee, Fonda	Montgomery	1868
	William Russell, Utica	Oneida	1868
	Alonzo Churchill, Utica	Oneida	1868
	E. G. Crafts, Binghamton	Broome	1868
	E. Odell, Unadilla	Otsego	1868
	H. D. Didama, Salina	Onondaga	1868
	H. N. Eastman, Geneva	Ontario	1868
	John F. Whitbeck, Rochester	Monroe	1868
	David Little, Rochester	Monroe	1868
	John R. Van Kleeck, New York	.....	1869
	James L. Banks, New York	.....	1869
	Jacob S. Wigton, Spring Valley	Rockland	1869
	Darling B. Whitney, East Norwich	Queens	1869
	Charles H. Porter, Albany	Albany	1869
	Henry B. Whiton, Troy	Rensselaer	1869
	John J. Flint, Fort Edward	Washington	1869
	M. L. Finch, Jonesville	Saratoga	1869

* Deceased.

	Names.	County.	Year.
Drs.	Wilson T. Bassett, Mount Vision	Otsego	1869
	James B. Murdock, Oswego	Oswego	1869
	William C. Wey, Elmira	Chemung	1869
	S. H. Harrington, Chenango Forks	Broome	1869
	Daniel W. Burdick, Preble	Cortland	1869
	William T. Swart, Canandaigua	Ontario	1869
	M. W. Townsend, Bergen	Genesee	1869
	Julius F. Miner, Buffalo	Erie	1869
	Ellsworth Eliot, New York city	.....	1870
	Henry D. Noyes, New York city	.....	1870
	George F. Shrady, New York city	.....	1870
	James O. Van Hoevenburgh, Kingston	Ulster	1870
	William Lamont, Charlotteville	Schoharie	1870
	James L. Babcock, Albany	Albany	1870
	Francis Burdick, Johnstown	Fulton	1870
	William H. Craig, Albany	Albany	1870
	Robert Frazier, Camden	Oneida	1870
	Jacob S. Mosher, Albany	Albany	1870
	S. H. French, 2d, Lisle	Broome	1870
	J. W. Thompson, Watkins	Schuyler	1870
	H. C. Hendricks, McGrawville	Cortland	1870
	William S. Hoffman, Port Byron	Cayuga	1870
	Thomas F. Rochester, Buffalo	Erie	1870
	E. M. Moore, Rochester	Monroe	1870
	Thomas Addis Emmett, New York city	.....	1871
	S. Fleet Speir, Brooklyn	Kings	1871
	J. L. Lamoree, Grahamville	Sullivan	1871
	R. Loughran, Kingston	Ulster	1871
	George H. Hubbard, Lansingburgh	Rensselaer	1871
	Nelson Fanning, Catskill	Greene	1871
	Hiram McNutt, Warrensburgh	Warren	1871
	B. F. Sherman, Ogdensburgh	St. Lawrence	1871
	Frank S. Lowe, Pulaski	Oswego	1871
	Walter Booth, Boonville	Oneida	1871
	L. Griffin, Binghamton	Broome	1871
	S. F. McFarland, Oxford	Chenango	1871
	Nathan R. Tefft, Onondaga Hill	Onondaga	1871
	James W. Wilkie, Auburn	Cayuga	1871
	William Van Pelt, Williamsville	Erie	1871
	R. C. Reynolds, Rochester	Monroe	1871

ARTICLE XXXVI.

List of Physicians on whom the honorary degree of Doctor of Medicine has been conferred by the Regents of the University, on the recommendation of the State Medical Society.

[The Society is restricted by statute from nominating more than four persons to the honorary degree of Doctor of Medicine in any one year. And by various resolutions it has been determined that the respective candidates shall possess moral and professional standing, shall be of the age of forty-five years or upward, and shall receive not less than two-thirds of the votes of the members present. The mode of nomination shall be as follows:

The Society shall, by open nomination, present the names of any number of physicians, and afterward the names of the candidates, or such of them as each member shall please to vote for, not to exceed four, shall be voted for in one ballot; and so many as, on this ballot, shall appear to have received two-thirds of all the votes of the members present, and those only, shall be the persons presented.]

1827....Drs. * John Onderdonk, New York.
* Jonathan Eights, Albany, Obiit 1848.
* Laurens Hull, Allegany, Obiit June 27, 1865. Æt. 86.
James Stevenson, Cambridge, Washington.
* Thomas Fuller, Otsego.
* Gain Robinson, Wayne.

1828.... * Thomas Broadhead, Columbia.
* John D. Henry, Monroe.
* Eleazer Gedney, Orange, Obiit 1832.

1829.... * Joseph Hunt, Kings.
* John H. Steele, Saratoga.
* Henry H. Sherwood, Jefferson.
* Daniel Ayers, Montgomery.

1830.... * Charles D. Townsend, Albany.
* Matson Smith, Westchester.
Enos Barnes, Yates.
* Consider King, Cayuga.

1831.... * Thomas Dunlap, Schenectady, Obiit 1860. Æt. 82.
* Samuel Porter, Onondaga.
* John McClellan, Columbia.
* John Ely, Greene.

1832.... George W. Phillips, Tompkins.
* Alpheus S. Greene, Jefferson, Obiit, February 25, 1851. Æt. 64.
* Fayette Cooper, New York.
* Thomas O. H. Crosswell, Greene, Obiit January, 1844. Æt. 76.

* Deceased.

1832....Drs. Lucius Kellogg, Queens.
1833.... Joshua Lee, Yates.
Asahel Prior Madison.
Josiah Trowbridge, Erie.
* Benjamin J. Mooers, Clinton.
1834.... Robert Collins, Rensselaer.
George Eager, Orange.
Asa Fitch, Delaware.
* Harvey W. Doolittle, Herkimer.
1841.... Henry B. Moore, Onondaga.
Claudius C. Coan, Seneca.
John Merriam, Columbia.
* Richard S. Brian, Rensselaer.
1842.... * Levi Farr, Chenango, Obiit July 18, 1859. Æt. 72.
William C. Dewitt, Ulster.
* Lester Jewett, Seneca, Obiit Dec., 1863. Æt. 70.
* Thos. Goodsell, Oneida, Obiit Jan. 12, 1864. Æt. 83.
1844.... Peter Van O'Linda, Albany.
William W. Miner, New York.
* Matthias B. Bellows.
Samuel Maxwell.
1845.... * Barton White, Dutchess, Obiit Dec. 11, 1862. Æt. 87.
Samuel Shumway, Essex.
William Mason, Chenango.
* Andrew F. Oliver, Yates.
1846.... Greene Miller, Ulster.
* Truman B. Hicks, Warren.
* Ithamar B. Crawe, Jefferson.
George W. Bradford, Cortland.
1847.... Pelatiah B. Brooks, Broome.
Caleb Bannister.
Hiram Corliss, Washington.
John W. Weed, New York.
1848.... Eliphalet Platt, Dutchess.
Benjamin E. Bowen, Oswego.
* Joshua Webster, Montgomery, Obiit 1849. Æt. 78.
George C. Scheffer, New York.
1849.... William D. Purple, Chenango.
Lewis Riggs, Cortland.
* Arba Blair, Oneida.

* Deceased.

1849....Drs. John W. Riggs, Montgomery.
1850.... John E. Todd, Onondaga.
James Thorn, Rensselaer.
* Patrick H. Hard, Oswego
* Nathaniel Miller, Suffolk.
1851.... Purcell Cook, Kings.
Phineas H. Burdick, Cortland.
* Heman Norton, Oneida, Obiit 1856. Æt. 75.
1852.... * Mason G. Smith, Wyoming, Obiit April 10, 1857.
Abel Huntington, Suffolk.
Erastus King, Otsego.
* Abel Brace, Green, Obiit Oct. 24, 1863. Æt. 70.
1854.... Sardius Brewster, Austinboro, Ohio.
Elias P. Metcalf, Livingston.
Jacob G. Snell, Montgomery.
* John W. Hinckley, Albany, Obiit 1860. Æt. 56.
1855.... Jonathan Kneeland, Onondaga.
James L. Phelps, New York.
A. Churchill, Utica.
* Edson Carr, Ontario, Obiit 1861. Æt. 60.
1856.... * Hiram Adams, Onondaga, Obiit March 9, 1865. Æt. 62.
* Silas West, Broome.
Samuel J. Swalm, Kings.
Medina Preston, Sangerfield, Oneida.
1857.... * William S. Norton, Washington, Obiit Feb. 20, 1863. Æt. 66.
Hiram Wotkyns, Rensselaer.
Millen Barnett, Madison.
Daniel H. Bissell, Livingston.
1858.... William L. Appley, Sullivan.
* William Rockwell, New York, Obiit Dec. 30, 1868. Æt. 68.
* James Hogaboom, Rensselaer.
Nelson S. Garrison, Kings.
1859.... Peter P. Staats, Albany.
James M. Sturtevant, Oneida.
* Merritt H. Cash, Orange, Obiit 1861. Æt. 59.
Richard Lanning, Tompkins.
1860.... Francis J. D'Avignon, Clinton.

* Deceased.

1860....	Drs.	Harrison Teller, Kings.
		Peter Moulton, Westchester.
1861....		Charles G. Bacon, Oswego.
		Charles Barrows, Oneida.
1864....		* Leonard G. Warren, Albany.
		R. Spencer Chapin, New York city.
1865....		Ferris Jacobs, Delhi, Delaware.
		Richard L. Satterlee, U. S. Army.
1867....		John Van Ness, Brooklyn, New York.
1868....		Lewis Post, Lodi.
1870....		E. S. Lyman, Sherburne.
		Tobias J. Greene, Parish.
1871....		Evander Odell, Unadilla.

* Deceased.

ARTICLE XXXVII.

List of persons eligible for election as Permanent Members.

[By resolution passed during the session of the Society in 1829, it was resolved, that hereafter no person be elected a permanent member unless he has served as a delegate and been nominated at a previous anniversary meeting.]

No. of District.		Nominated.
3.	Drs. Abram D. Spoor	1854
3.	S. Smith	1856
5.	William H. Gardiner, Oneida	1857
1.	J. Marion Sims, New York	1858
3.	Alexander H. Hoff, Albany	1859
1.	William H. Dudley, Kings county	1860
1.	John A. Brady, Kings county	1860
1.	Samuel R. Percy, New York	1860
3.	A. Fitch, Delaware	1860
5.	Nelson J. Barnett, Oswego	1860
3.	Wm. M. Jones, Livingston, Columbia county	1861
1.	J. H. Hobart Burge, Brooklyn	1862
1.	C. L. Mitchell	1862
1.	John P. Garrish, New York	1862
2.	James Hart Curry, Westchester	1862
5.	W. Taylor	1862
1.	Julius Auerbach	1863
1.	B. I. Raphael	1863
1.	J. King Merritt, New York city	1864
1.	James Kennedy, New York city	1864
1.	Louis Elsberg, New York city	1864
1.	Jerome C. Smith, New York	1865
2.	Avery Cook, Orange	1865
3.	John Pindar, Schoharie	1865
5.	James Whitford, Madison	1865
6.	W. S. Griswold, Broome	1865
7.	Joseph H. Richardson, Cayuga	1865
1.	Horace P. Farnham, New York city	1866
1.	John H. Hinton, New York city	1866
4.	John H. Mooers, Plattsburgh, Clinton	1866
5.	G. L. Halsey, Otsego county	1866
8.	Lawrence McKay, Rochester, Monroe	1866

No. of District.		Nominated.
1.	Drs. William Nelson Blakeman, New York city	1867
1	Thomas S. Bahan, New York city.....	1867
1.	James J. Connolly, New York city	1867
1.	William T. White, New York city	1867
1.	Christopher Prince, New York city.....	1867
1.	Wm. M. Chamberlain, New York city	1867
1.	Wm. F. Thoms, New York city.....	1867
1.	Robert Newman, New York city.....	1867
1.	Andrew Otterson, Brooklyn	1867
1.	James Anderson, New York city.....	1867
4.	A. Pollard, Westport, Essex	1867
4.	Arthur S. Wolff, Plattsburgh, Clinton	1867
5.	Frank D. Beebe, Hamilton, Madison	1867
5.	Thomas B. Smith, Cooperstown, Otsego.....	1867
6.	A. S. Coe, Oswego	1867
7.	James D. Button, Auburn.....	1867
1.	Edward H. Janes, New York.....	1868
3.	P. V. S. Pruyn, Kinderhook.....	1868
4.	Henry H. Greene, Plaine's Hollow	1868
5.	J. K. Leaning, Fly Creek, Otsego	1868
6.	J. C. Dolson, Bath	1868
7.	A. W. Marsh, Palmyra	1868
7.	E. J. Schoonmaker, Magee's Corners	1868
8.	Charles E. Rider, Rochester	1868
1.	Nathan Bozeman, New York	1869
1.	R. Cresson Stiles, Brooklyn.....	1869
1.	Isaac H. Barber, Brooklyn.....	1869
1.	James L. Little, New York	1869
1.	Benjamin Howard, New York	1869
1.	J. W. Gouley, New York	1869
2.	F. B. Smith, Tappen	1869
2.	M. R. Holbrook, Poughkeepsie	1869
3.	John Calhoun, Delhi, Delaware county.....	1869
3.	Jas. S. McLaury, Walton, Delaware county.....	1869
3.	James S. Bailey, Albany.....	1869
4.	John Parr, Buel	1869
4.	Asahel Perry, South Easton, Washington county,	1869
5.	T. J. Green, Parish, Oswego county	1869
6.	D. S. Chamberlin, Lyons, Wayne county	1869
7.	E. S. Smith, Yates	1869

No. of District.		Nominated.
7.	Drs. Lyman Congdon, Tompkins	1869
8.	J. R. Cotes, Batavia	1869
8.	J. R. Lathrop, Rochester	1869
8.	Wm. W. Ely, Rochester	1869
8.	George Swinburne, Rochester	1869
1.	Gurdon Buck, New York	1870
1.	Horace P. Farnham, New York	1870
1.	William C. Otterson, Kings county	1870
1.	Alexander Hutchins, Kings county	1870
1.	John S. Young, Kings county	1870
2.	Wm. H. Helm, Sing Sing	1870
2.	Levi Lounsbury, Stone Ridge	1870
2.	John Wales, Rondout	1870
2.	A. C. Hull, Olive	1870
2.	A. T. Douglass, Rondout	1870
3.	Edward R. Hun, Albany	1870
3.	R. Halsted Ward, Troy	1870
3.	Le Roy McLean, Troy	1870
3.	Joseph Lewi, Albany	1870
3.	Peter S. Pruyn, Kinderhook	1870
4.	Daniel G. Dodge, Rouse's Point	1870
4.	D. W. Jones, Franklin county	1870
4.	E. H. Bridges, Ogdensburgh	1870
4.	Edward S. Walker, Ilion	1870
5.	Edwin Hutchinson, Utica	1870
5.	William L. Baldwin, Utica	1870
5.	C. C. P. Clark, Oswego	1870
5.	C. T. Budd, Turin, Lewis county	1870
5.	William H. Rice, Phœnix	1870
5.	George W. Cooke, Otego	1870
5.	Horace Lathrop, Cooperstown	1870
6.	Joshua B. Graves, Corning	1870
6.	Samuel Ensign, Bath	1870
6.	Carlton R. Heaton, Newark Valley	1870
6.	William H. Beardsley, Coventry	1870
7.	Charles G. Pomeroy, Newark	1870
7	E. W. Simmons, Canandaigua	1870
7.	C. C. Murphy, East Bloomfield	1870
7.	George W. Earll, Skaneateles	1870
7.	William Vosburgh, Lyons	1870

No. of District.		Nominated.
8.	Drs. George Abbott, White's Corners	1870
8.	M. W. Townsend, Bergen	1870
1.	G. S. Wiston, New York	1871
1.	D. B. St. John Roosa, New York	1871
1.	A. E. M. Purdy, New York	1871
2.	Thomas Hammond, Dover Plains, Dutchess	1871
3.	Matthew H. Burton, Troy, Rensselaer county	1871
3.	Francis H. Parmele, Greenbush, Rensselaer county,	1871
3.	Charles L. Hubbell, Troy, Rensselaer county	1871
3.	Edward W. Carmichael, Sandlake, Rensselaer	1871
3.	John P. Whitbeck, West Troy, Rensselaer	1871
3.	E. Whittlesy, Durham, Greene	1871
4.	Moses H. Colby, Dean's Corners, Saratoga	1871
4.	Newton H. Ballou, Mechanicsville, Saratoga	1871
4.	Alfred J. Long, Whitehall, Washington	1871
5.	H. G. P. Spencer, Watertown, Jefferson	1871
6.	William Bassett, Binghamton, Broome	1871
6.	T. H. Squire, Elmira, Chemung	1871
6.	F. M. Perrine, Dansville, Livingston county	1871
7.	Roger W. Pease, Syracuse, Onondaga	1871
8.	Simon T. Clark, Lockport, Niagara	1871
8.	C. N. Palmer, Lockport, Niagara	1871

ARTICLE XXXVIII.

List of persons eligible for election as Honorary Members.

[The election of Honorary Members is authorized by statute. The Society, in its by-laws, after declaring that certain individuals shall be Honorary Members by virtue of their present or previous offices, have directed that only two Honorary Members shall be annually elected, having been nominated at least a year previous.]

In 1855, on motion of Dr. Barent P. Staats, it was

Resolved, To elect to honorary membership non-residents of the State of New York only.

By Dr. B. Fordyce Barker,

Resolved, That section fifteen of the by-laws be amended in accordance with the report of the committee, striking out the word "two" and inserting the word "six," so as to elect not more than six honorary members yearly. [Transactions 1859, p. 412.]

Nominated.		
1855....	Drs.	John H. Ridell
		Christopher Widner.
1857....		Bennett Dowler, New Orleans, Louisiana.
1863....		Ralph Deming, Litchfield, Conn.
1865....		H. J. Stevens, St. Albans, Vt.
1866....		William S. Hopkins, Vergennes, Vt.
1868....	Profs.	Stokes, Dublin.
		Rawdon McNamara, Dublin.
	Drs.	H. C. Lombard, Geneva, Switzerland.
		William Livingston, St. Johns, N. B.
1871....		Greenville Dowell, Galveston, Texas.
		John J. H. Love, Montclair, N. J.
		M. Nelaton, Paris, France.
		Rudolph Virchow, Berlin.

ARTICLE XXXIX.

Classification of counties as to the election of delegates.

[The first classification of counties was made pursuant to the statute of 1806, at the session of the Society in 1807. The additional counties subsequently erected were classified by virtue of powers given by the same statute, at the sessions of the Society held in 1813 and 1826. In case of the erection of any new county, the Secretary is directed to add the same, so as to keep the present number as nearly equal as possible.]

VACANT.
February 1, 1873.

Albany,
Oneida,
Cayuga,
Otsego,
Saratoga,
Schenectady,
Tioga,
Cattaraugus,
Richmond,
Steuben,
Sullivan,
Tompkins,
Chemung,
Rockland,
Albany Medical College,
Medical Department of University of Buffalo.—16.

VACANT.
February 1, 1874.

Westchester,
Columbia,
Ulster,
Madison,
Herkimer,
Chenango,
Washington,
Clinton,
Suffolk,
St. Lawrence,
Cortland,
Erie,
Hamilton,
Kings,
Wayne,
Medical Faculty of New York city University,
N. Y. Academy of Medicine,
Bellevue Hospital Medical College.—18.

VACANT.
February 1, 1871.

New York,
Orange,
Delaware,
Onondaga,
Montgomery,
Rensselaer,
Genesee,
Seneca,
Allegany,

VACANT.
February 1, 1871.

Broome,
Franklin,
Livingston,
Monroe,
Oswego,
Yates,
Wyoming,
Schuyler.—17.

VACANT.
February 1, 1872.

Greene,
Dutchess,
Jefferson,
Ontario,
Essex,
Lewis,
Schoharie,
Niagara,
Warren,

VACANT.
February 1, 1872

Chautauqua,
Orleans,
Putnam,
Queens,
Fulton,
College Phy. and Sur. N. Y.,
Medical Faculty of Geneva College,
L. Isl'd Col. Hospital.—17.

ARTICLE XL.

Presidents of the Medical Society of the State of New York since its organization.

Drs.	* William McClelland, Albany, Obiit 1812	1807
	* Nicholas Romayne, New York, Obiit 1817. Æt. 67	1808
	* Nicholas Romayne, New York	1809
	* Nicholas Romayne, New York	1810
	* William Wilson, Columbia, Obiit, 1829	1811
	* John R. B. Rodgers, New York	1812
	* John R. B. Rodgers, New York	1813
	* John R. B. Rodgers, New York	1814
	* Joseph White, Otsego, Obiit June 2, 1832. Æt. 70	1815
	* Joseph White, Otsego	1816
	* John Stearns, Albany, Obiit 1849. Æt. 75	1817
	* John Stearns, Albany	1818
	* John Stearns, Albany	1819
	* John Stearns, Albany	1820
	* Samuel L. Mitchell, New York, Obiit Sept. 7, 1831. Æt. 67	1821
	* Samuel L. Mitchell, New York	1822
	* Alexander Coventry, Utica, Obiit 1831. Æt. 65	1823
	* Alexander Coventry, Utica	1824
	* James R. Manley, New York	1825
	* James R. Manley	1826
	* Theodoric Romeyn Beck, Albany, Obiit Nov. 19, 1855. Æt. 64	1827
	* Theodoric Romeyn Beck	1828
	* Theodoric Romeyn Beck	1829
	* Jonathan Eights, Albany, Obiit Aug. 10, 1848. Æt. 75	1830
	* Jonathan Eights	1831
	* Thomas Spencer, Madison, Obiit May 30, 1857. Æt. 65,	1832
	* Thomas Spencer	1833
	* John H. Steele	1834
	* John H. Steele	1835
	James McNaughton, Albany	1836
	James McNaughton	1837

* Deceased.

Drs. * Laurens Hull, Oneida, Obiit June 27, 1865. Æt. 86.. 1838
* Laurens Hull 1839
* Sumner Ely, Otsego, Obiit Feb. 3, 1857. Æt. 70 1840
* John B. Beck, New York, Obiit April 9, 1851. Æt. 56, 1841
* William Taylor, Onondaga, Obiit Sept., 1865. Æt. 74, 1842
* Samuel White, Columbia, Obiit, 1845. Æt. 68 1843
* Joel A. Wing, Albany, Obiit, Sept. 6, 1852. Æt. 64.. 1844
* James Webster 1845
* John McCall, Utica, Obiit Oct. 6, 1867. Æt. 80 1846
* Thomas W. Blatchford, Troy, Obiit Jan. 7, 1866. Æt. 71 1847
* Alexander H. Stevens, New York, Obiit, March 30, 1869. Æt. 79 1848
* Alexander H. Stevens 1849
* Alexander Thompson, Aurora, Obiit, Sept. 28, 1869 .. 1850
* Robert G. Frary, Hudson, Obiit Dec. 29, 1862 1851
Alonzo Clark, New York..... 1852
J. S. Sprague, Cooperstown..... 1853
C. B. Coventry, Utica 1854
Frank H. Hamilton, New York 1855
* Alden March, Albany, Obiit, June 17, 1869. Æt. 73.. 1856
* Augustus Willard, Greene, Obiit March, 1868. Æt. 69, 1857
* Thomas C. Brinsmade, Troy, Obiit June, 1868. Æt. 66, 1858
B. Fordyce Barker, New York..... 1859
* Daniel T. Jones, Onondaga, Obiit March 29, 1861. Æt. 60 1860
Edward H. Parker, Poughkeepsie 1861
Thomas Hun, Albany..... 1862
Daniel P. Bissell, Utica 1863
Frederick Hyde, Cortland 1864
Henry W. Dean, Rochester..... 1865
Joseph C. Hutchison, Brooklyn 1866
John P. Gray, Utica..... 1867
J. V. P. Quackenbush, Albany..... 1868
James P. White, Buffalo 1869
Samuel O. Vander Poel, Albany 1870
William C. Wey, Elmira 1871
C. R. Agnew, New York..... 1872

* Deceased.

ARTICLE XLI.

Medical Societies of the Counties of New York.

ALBANY COUNTY.

ORGANIZED JULY 29, 1806.

[Annual meeting second Tuesday in November, at which time the president delivers an address. Semi-annual meeting second Tuesday in June, at which time the vice-president delivers an address. Stated meetings are held in the evening twice each month from November to June. Initiation fee, $3; annual dues, $2.]

OFFICERS.

Drs. William H. Bailey, President.
Andrew Wilson, Vice-President.
Charles H. Porter, Secretary.
Daniel V. O'Leary, Treasurer.

Censors.

Drs. M. M. Lamb, Statts Winne, J. R. Boulware, J. P. Witbeck, Dr. J. F. Crounse.

Delegates to State Medical Society.

Drs. Joseph Lewi, E. R. Hun, J. S. Bailey, J. P. Witbeck.

Delegates to American Medical Association.

Drs. Amos Fowler, John Ferguson, Henry March, Joseph Lewi.

MEMBERS.

Drs.	O. C. Alexander	66 Eagle street	Albany.
	Charles S. Allen	Greenbush	Rensselaer Co.
	G. H. Armsby	669 Broadway	Albany.
	James H. Armsby	669 Broadway	do
	John Babcock	Bethlehem .... P. O. Cedar Hill.	
	J. L. Babcock	101 Madison avenue	Albany.
	James S. Bailey	95 Eagle, cor. Hamilton	do
	William H. Bailey	1 Washington avenue	do
	John H. Becker	New Scotland.	
	Thomas Beckett	248 Washington avenue	Albany.
	Herman Bendell	5 Beaver Block	do

Drs. U. G. Bigelow	81½	Hudson	Albany.
J. M. Bigelow	81½	Hudson	do
J. R. Boulware	171	Hamilton, cor. Eagle	do
James P. Boyd	95	Hudson	do
J. Myers Briggs		Coeymans Hollow.	
R. J. Bullock	146	Swan	Albany.
H. S. Case	85	Madison av., cor. Rose	do
William H. Craig	12	Ten Broeck street	do
T. D. Crothers	370	Madison avenue	do
Hiram Crounse		Clarksville.	
John F. Crounse		Knowersville.	
J. Reid Davidson		Castleton	Rensselaer Co.
Estus H. Davis	1	Beaver block	Albany.
A. De Graff		Callanan's Corners.	
C. Devol	48	Franklin street	Albany.
M. L. Dunkelmeyer	580	Broadway	do
A. A. Edmeston	140	North Pearl street	do
John Ferguson	371	Madison avenue	do
J. D. Featherstonhaugh,		Cohoes.	
David E. Fonda	34	Philip street	Albany.
Amos Fowler	45	Second street	do
B. B. Fredenburgh		Coeymans.	
S. H. Freeman	675	Broadway	Albany.
John R. Gregory		West Troy.	
William Geoghegan	156	Madison avenue	Albany.
H. R. Haskins	698	Broadway	do
Thomas Helme		McKowansville.	
Alfred B. Heusted	77	Eagle street	Albany.
E. R. Hun	23	Elk street	do
Thomas Hun	21	Elk street	do
Stephen Johnson		Cohoes.	
Myron Knowlton	119	Green	Albany.
M. M. Lamb	73	Madison avenue	do
John V. Lansing	83	Hawk street	do
Joseph Lewi	86	Westerlo street	do
H. D. Losee		Galway	Saratoga Co.
Henry March	137	Hudson street	Albany.
Alexander McDonough,		Cohoes.	
R. S. McMurdy	494	Broadway	Albany.
Henry G. McNaughton,	132	State street	do
James McNaughton	54	North Pearl street	do

Drs. Peter McNaughton	132	State street	Albany.
J. W. Moore		Cohoes.	
Levi Moore	59	Congress street	Albany.
William Morgan	241	Sherman street	do
C. D. Mosher	285	South Pearl street	do
Frank G. Mosher		Coeymans.	
J. S. Mosher	3	Lancaster street	Albany.
P. M. Murphy	442	Broadway	do
John J. Myers	920	Broadway	do
G. H. Newcomb	90	Madison avenue	do
Joseph N. Northrop	51	Second street	do
C. B. O'Leary	136	Central avenue	do
D. V. O'Leary	47	South Ferry street	do
F. B. Parmele		Greenbush	Rensselaer Co.
Charles H. Porter	55	Eagle street	Albany.
J. V. P. Quackenbush	712	Broadway	do
W. H. F. Reynolds		Alms-house	do
Charles A. Robertson	17	Washington avenue	do
John B. Rossman	70	Madison avenue	do
R. H. Sabin		West Troy.	
C. F. Scattergood	10	Bleecker place	Albany.
A. W. Shiland		West Troy.	
William Sigsbee		Knox.	
W. B. Sims	134	First street	Albany.
Charles H. Smith	246	Washington avenue	do
B. P. Staats	61	North Pearl street	do
Charles P. Staats	42	Madison avenue	do
Peter P. Staats	42	Madison avenue	do
H. W. Steenbergh		Green Island.	
G. T. Stevens	128	State street	Albany.
D. M. Stimson	17	Fayette street	do
A. P. Ten Eyck		De Freestville	Rensselaer Co.
John Thompson	1	Clinton avenue	Albany.
Richard D. Travers		Green Island.	
John T. Van Alstyne		West Troy.	
S. O. Vander Pool	144	State street	Albany.
Albert Vanderveer	72	Hudson	do
P. Van Olinda		Hamilton cor. Green	do
E. M. Wade		Watervliet Centre.	
Daniel Wasserbach	294	South Pearl street	Albany.
C. E. Witbeck		Cohoes.	

Drs. John P. Witbeck.....	West Troy.	
Andrew Wilson.....	57 Eagle street.....	Albany.
Staats Winne.....	94 Westerlo street.....	do

ALLEGHANY COUNTY.

No county society.

BROOME COUNTY.

[Annual meeting, first Tuesday in October. Semi-annual meeting, second Tuesday in May.]

OFFICERS.

Drs. J. C. Edson, President.
James Brooks, Vice-President.
J. G. Orton, Secretary.
E. G. Crafts, Treasurer.

Censors.

Drs. George Burr, J. G. Orton, L. Griffin, E. G. Crafts, Dr. S. H. French.

Delegates to American Medical Association.

Dr. J. G. Orton, Dr. C. J. Seymour.

Delegate to State Medical Society.

Dr. William Bassett.

Delegate to Chenango County Medical Society.

Dr. J. W. Freeman.

Delegate to Chemung County Medical Society.

Dr. J. G. Orton.

Delegate to Cortland County Medical Society.

Dr. S. H. French.

Delegate to Tioga County Medical Society.

Dr. L. D. Witherill.

Delegate to Otsego County Medical Society.

Dr. George Burr.

Delegate to Delaware County Medical Society.

Dr. E. G. Crafts.

Committee on Medical Ethics.

Dr. S. H. Harrington, Dr. D. S. Burr,
Dr. J. W. Booth.

Essayist.

Dr. W. L. Ayer.

Committee on Materia Medica and Therapeutics.

Dr. W. J. Orton.

Committee on Surgery and Obstetrics.

Dr. George Burr.

Committee on Physiology and Pathology.

Dr. S. H. French, 2d.

Committee on Epidemics and Endemics.

Dr. D. P. Jackson.

MEMBERS.

Drs.	S. P. Allen	Castle Creek.	
	W. L. Ayer	18 Chenango	Binghamton.
	W. Bassett	Cor. Front and North	do
	W. S. Beebe	Kirkwood.	
	J. W. Booth	Colesville.	
	James Brooks	Front near Main	Binghamton.
	P. B. Brooks	56 Front	do
	Martin Bullock	Chenango.	
	D. S. Burr	119 Court	Binghamton.
	George Burr	119 Court	do
	William Butler	Maine.	
	R. R. Carr	Binghamton.	
	J. H. Chittenden	62 Susquehanna	Binghamton.
	E. G. Crafts	99 Washington	do
	Charles Dickinson	Binghamton.	
	J. C. Edson	Windsor.	
	E. J. Ford	Binghamton.	
	C. B. Foster	Vestal.	
	J. W. Freeman	Windsor.	
	S. H. French	Lisle.	
	S. H. French, 2d	Lisle.	
	L. Griffin	11 Jay	Binghamton.

Drs. E. Guy	Harpersville.	
S. H. Harrington	Chenango Forks.	
P. H. Hayes	Killawog.	
H. Hemingway	Whitney's Point.	
D. P. Jackson	Front, near Main	Binghamton.
Ezra Lawyer	Union Centre.	
F. T. Maybury	Binghamton.	
John Munsell, Jr	Castle Creek.	
J. G. Orton	3 Doubleday place, cor. Henry and Canal	Binghamton.
W. J. Orton	Lisle.	
George E. Pierson	Osborn Hollow.	
George S. Redfield	Kirkwood.	
C. B. Richards	Front	Binghamton.
C. B. Rogers	Whitney's Point.	
C. J. Seymour	Binghamton.	
Frank Sturdevant	Deposit.	
Frank H. Taylor	Upper Lisle.	
W. W. Whitney	Union.	
L. D. Witherill	Union.	

CATTARAUGUS COUNTY.

Officers.

Drs. Thomas J. Wheeler, President.
James Nichols, Vice-President.
Harlen S. Smith, Secretary and Treasurer.

Censors.

Dr. J. Nichols, Dr. Simeon V. Pool,
Dr. Elihu S. Stewart.

Delegates to State Medical Society.

Dr. Thomas J. Wheeler, Dr. Elihu S. Stewart.

Members.

Drs. C. H. Bartlett	Portville.	
Zenas G. Bullock	Allegany.	
E. Dresser	East Otto.	
John L. Eddy	Olean.	
H. L. Ensworth	Salamanca.	
F. D. Findlay	Franklinville.	

Drs. M. C. Follett ..... Olean.
James Nichols ..... Limestone.
S. V. Pool..... Otto.
Harlen S. Smith ..... Ellicottsville.
George St. John ..... Yorkshire Centre.
E. S. Stewart ..... Ellicottsville.
Lyman Twomley..... Little Valley.
T. J. Wheeler ..... Conewango.
A. E. Willard..... Hinsdale.
T. J. Williams..... Ellicottsville.
Charles A. Woodruff... Olean.

CAYUGA COUNTY.

[Annual meeting, first Tuesday in June. Other meetings quarterly.]

OFFICERS.

Drs. B. A. Fordyce, President.
J. D. Button, Vice-President.
A. R. Shank, Secretary and Treasurer.

Censors.

Dr. S. Gilmore, Dr. A. S. Cummings,
Dr. W. S. Hoffman.

Delegates to State Medical Society.

Dr. J. W. Wilkie, Dr. David L. Dodge.

MEMBERS.

Drs. A. B. Aiken.....	Moravia.	
D. H. Armstrong	South street.....	Auburn.
E. P. Baker	Aurora.	
J. D. Benton	Cato.	
F. H. Benedict.....	Weedsport.	
N. Bevier	Owasco.	
L. Briggs	159 Genesee.....	Auburn.
John I. Brinkerhoff ...	26 East Genesee	do
T. S. Brinkerhoff.....	Garden, cor. North.....	do
I. D. Brown	Weedsport.	
James D. Button.....	8 Hurlburt.....	Auburn.
O. C. Clark	Weedsport.	
Philo Clark.....	King's Ferry.	
B. F. Coleman	King's Ferry.	
William F. Cooper	Kelloggsville.	

Drs. A. S. Cummings	Cayuga.	
David Dimon	8 Water	Auburn.
Theodore Dimon	William	do
David L. Dodge	10 James	do
H. D. Eldridge	Port Byron.	
D. A. Force	Port Byron.	
B. A. Fordyce	Union Springs.	
B. Fosgate	129 Genesee	Auburn.
C. L. George	10½ Clark	do
S. Gilmore	Fleming.	
F. N. Hamlin	Union Springs.	
W. S. Hoffman	Port Byron.	
L. Hooker	Cato.	
C. C. Jewett	Moravia.	
E. Leffingwell	Aurora.	
H. McCarty	Weedsport.	
N. Mead	Locke.	
B. E. Osborne	Throopsville.	
D. R. Pearl	Sherwood.	
C. Powers	Moravia.	
G. W. Reynolds	Conquest.	
C. P. Sandford	136 Genesee	Auburn.
A. R. Shank	5 State	do
C. E. Van Anden	44 Genesee	do
J. W. Wilkie	State Asylum for Insane Convicts	do
H. D. Whitbeck	Venice.	
A. White	Montezuma.	

CHAUTAUQUA COUNTY.

Reorganized July 5, 1870.

[Meetings held annually on the second Tuesday in July.]

Officers.

Drs. J. Andrews, President.
M. S. Moore, Vice-President.
Henry R. Rogers, Secretary and Treasurer.

Censors.

Dr. J. H. Rathbone, Dr. J. B. Judson,
Dr. G. B. Bishop.

Delegate to State Medical Society.

Dr. T. D. Strong.

Delegates to American Medical Association.

Dr. J. H. Rathbone, Dr. George R. Spratt,
Dr. J. M. Brown.

MEMBERS.

Drs. A. Andrew	Jamestown.
G. B. Bishop	Sheridan.
E. E. Boyd	Ashville.
J. M. Brown	Westfield.
William Chace	Mayville.
C. J. Hazeltine	Jamestown.
G. W. Hazeltine	Jamestown.
H. D. Ingraham	Kennedy.
J. B. Judson	Silver Creek.
M. S. Moore	Fredonia.
H. B. Osborne	Sherman.
J. H. Rathbone	Jamestown.
H. R. Rogers	Dunkirk.
S. M. Smith	Dunkirk.
G. R. Spratt	Clymer.
T. D. Strong	Westfield.
D. S. Wilson	Mina.

CHEMUNG COUNTY.

[Quarterly meetings are held at Elmira, on the second Tuesday in March and June (the annual meeting); September and December (the semi-annual meeting).]

OFFICERS.

Drs. Geo. Dean, President.
F. B. Abbott, Vice-President.
Ira F. Hart, Secretary.
William Woodward, Treasurer.

Censors.

Drs. George Dean, Drs. J. H. Stanchfield,
Louis Velder, H. S. Chubbuck,
Dr. H. H. Purdy.

Delegate to State Medical Society.

Dr. Truman H. Squire.

Members.

Drs. Frank B. Abbott	252 Water	Elmira.
L. W. Bailey	Millport.	
R. Bancroft	Elmira.	
George M. Beard	Millport.	
Z. F. Chase	73 Church	Elmira.
H. S. Chubbuck	36 Baldwin	do
J. H. Cole (honorary)	Bradford Co.	Penn.
William H. Davis	Horseheads.	
George Dean	Sullivanville.	
Albert H. Flood	44 Water	Elmira.
John M. Flood	44 Water	do
Patrick H. Flood	44 Water	do
Edward L. Ford	Chemung.	
Ebenezer Geve	Chemung.	
L. Granger (honorary)	Lawrenceville, Tioga Co.	Penn.
Erastus L. Hart	78 Lake	Elmira.
Ira F. Hart	147 Church	do
Henry Meisel	35 Lake	do
Corbet Peebles	Big Flats.	
Henry H. Hurdy	33 Baldwin	Elmira.
Horace Seaman	Millport.	
Norman Smith (hon'ry),	13 South Water	Elmira.
Truman H. Squire	136 Church	do
John K. Stanchfield	3 Main	do
C. M. Turner (hon'ry)	Towanda, Bradford Co.	Penn.
Louis Velder	17 High	Elmira.
Chas. Voorhees (hon'ry),	Daggett's Mills, Tioga Co.	Penn.
William C. Wey	68 Water	Elmira.
E. R. Wheeler	221 Church	do
William Woodward	Big Flats.	

CHENANGO COUNTY.

[Annual meeting second Tuesday in January. Semi-annual meeting second Tuesday in June.]

Officers.

Drs. S. F. McFarland, President.
H. H. Beecher, Vice-President.
D. M. Lee, Secretary.
G. W. Avery, Treasurer.

Censors.

Drs. G. W. Avery, Drs. H. K. Bellows,
H. H. Beecher, George Douglas,
Dr. J. V. Lewis.

Delegate to State Medical Society.

Dr. W. H. Beardsley.

Delegates to American Medical Association.

Dr. M. D. Spencer, Dr. H. Mitchel,
Dr. A. C. Hazard.

MEMBERS.

Drs. G. W. Avery	Norwich.
B. F. Beardsley	Coventry.
William H. Beardsley	Coventry.
H. H. Beecher	Norwich.
H. K. Bellows	Norwich.
John Clark	Guilford.
R. M. Clark	Guilford.
James B. Cook	Afton.
George Douglas	Oxford.
Thomas Dwight	Preston.
E. L. Ensign	McDonough.
S. C. Gibson	South New Berlin.
J. D. Guy	Coventry.
Horace Halbert	Pitcher.
S. M. Hand	Norwich.
E. D. Hayward	Columbus.
A. C. Hazard	South New Berlin.
B. F. Holcomb	Greene.
J. D. Jameson	South Otselic.
L. M. Johnson	Greene.
G. A. Jones	New Berlin.
D. M. Lee	Oxford.
J. V. Lewis	North Norwich.
D. Loomis	New Berlin.
E. S. Lyman	Sherburne.
S. F. McFarland	Oxford.
J. D. Meacham	Bainbridge.
Henry Mitchell	Norwich.

Drs. E. Odell ..... Unadilla.
B. J. Ormsby..... Plymouth.
R. B. Prindle... ..... Norwich.
C. M. Purdy..... Norwich.
William D. Purple .... Greene.
I. J. Reynolds ..... South Otselic.
William G. Sands..... Oxford.
B. S. Sill..... Bainbridge.
B. F. Smith ..... Mount Upton.
C. D. Spencer ..... Butternuts.
M. D. Spencer ..... Guilford.
William H. Stewart ... Earlville.
James Thompson..... Norwich.
F. Van Keuren ..... Sherburne.
Devillo White ..... Sherburne.
O. S. Williams..... Smithville Flats.
M. M. Wood..... Greene.
John Yale ..... Bainbridge.

CLINTON COUNTY.

[Annual meeting first Tuesday in January.]

OFFICERS.

Drs. T. De Forris, President.
R. Erwin, Vice-President.
E. M. Lyon, Secretary.
J. H. Smith, Treasurer.
A. S. Wolff, Corresponding Secretary.

Censors.

Drs. T. De Forris, Drs. L. Wood,
J. H. Smith, Stephen Bertrand,
Dr. R. E. Hyde.

Delegate to State Medical Society.

Dr. A. C. Butler.

Delegate to American Medical Association.

Dr. A. S. Wolff.

Delegates to Medical Society of Northern New York.

Dr. T. De Forris, Dr. L. Wood,
Dr. E. M. Lyon.

MEMBERS.

Drs.	C. B. Barber	Black Brook.
	Stephen Bertrand	Schuyler Falls.
	A. C. Butler	Plattsburgh.
	Joel Chandler	Mooers.
	William N. Coit	Champlain.
	T. De Forris	Plattsburgh.
	D. G. Dodge	Rouse's Point.
	George D. Dunham	Saranack.
	Ralph Erwin	Mooers Forks.
	I. P. Foot	Plattsburgh.
	R. E. Hyde	East Chazy.
	E. M. Lyon	Plattsburgh.
	T. B. Nichols	Plattsburgh.
	P. Sherman	Peru.
	J. H. Smith	Plattsburgh.
	Orville Terry	Redford.
	A. S. Wolff	Dannemora.
	Lucien Wood	Ausable Forks.

COLUMBIA COUNTY.

[Annual meeting, first Tuesday in October. Semi-annual, first Tuesday in June, at City Hall, Hudson, N. Y.]

OFFICERS.

Drs. J. C. Benham, President.
L. C. B. Graveline, Vice-President.
P. B. Collier, Secretary and Treasurer.

Delegates to State Medical Society.

Dr. William H. Pitcher, Dr. G. P. Salmon.

MEMBERS.

Drs.	William C. Bailey	Chatham Four Corners.
	Joseph Bates	New Lebanon.
	Wilfred L. Bates	Canaan Centre.
	X. T. Bates	New Lebanon.
	J. C. Benham	Hudson.
	George E. Benson	Valatie.
	E. B. Boice	Valatie.
	E. W. Bostwick	Hudson.
	P. B. Collier	Valatie.

Drs. L. Gile ..... Canaan Four Corners.
L. C. B. Graveline .... Chatham Four Corners.
William Jones ..... Livingston.
J. Lockwood ..... Philmont.
N. H. Mesick..... West Taghkanick.
William H. Pitcher.... Hudson.
Rensselaer Platner .... Clermont.
Lucas Pruyn..... Kinderhook.
P. V. S. Pruyn ..... Kinderhook.
George Rossman ..... Ancram.
G. P. Salmon..... New Lebanon.
H. B. Salmon..... Stuyvesant Falls.
J. N. Schermerhorn ... Stockport.
P. W. Schufeldt..... East Taghkanick.
H. L. Smith..... Hudson.
A. Van Dusen..... Claverack.
R. H. Vedder ..... Chatham Centre.
J. K. Wardle. ..... Hudson.
J. P. Wheeler ..... Hudson.
V. Whitbeck. ..... Hudson.

CORTLAND COUNTY.

[Annual meeting, second Tuesday in December. Semi-annual, second Tuesday in June.]

OFFICERS.

Drs. H. C. Hendrick, President.
E. H. Barnes, Vice-President.
Caleb Green, Secretary.
George W. Bradford, Treasurer.
F. Hyde, Librarian.

Censors.

Drs. C. Green, Drs. E. H. Barnes,
M. G. Hyde, D. W. Burdick,
Dr. O. G. Dibble.

Delegate to State Medical Society.

Dr. William Fitch.

Delegates to American Medical Association.

Dr. J. D. Tripp, Dr. M. G. Hyde,
Dr. H. O. Jewett.

Delegate to Broome County Medical Society.

Dr. George W. Bradford.

Delegate to Onondaga County Medical Society.

Dr. Frederick Hyde.

Delegate to Tompkins County Medical Society.

Dr. H. C. Hendrick.

Delegate to Chenango County Medical Society.

Dr. Jerome Angel.

MEMBERS.

Drs.	Jerome Angel	Union Valley.	
	E. H. Barnes	Marathon.	
	N. R. Barnes	Cincinnatus.	
	Seneca Beebe.....	Cincinnatus.	
	George W. Bradford ..	Homer.	
	Isaac S. Briggs	Dryden.....	Tompkins Co.
	Horace Bronson.....	Virgil..	
	Daniel W. Burdick	Preble.	
	O. G. Dibble	Pompey	Onondaga Co.
	William Fitch	Dryden.....	Tompkins Co.
	Franklin Goodyear....	Cortlandville.	
	Caleb Green.....	Homer.	
	A. L. Head	Homer.	
	H. C. Hendrick	McGrawville.	
	J. W. Hughes	Cortlandville.	
	Frederick Hyde.....	Cortlandville.	
	Miles G. Hyde.....	Cortlandville.	
	H. O. Jewett	Cortlandville.	
	J. H. Knapp	Hartford.	
	George W. Maxon.....	Scott.	
	E. C. Moe.....	Groton	Tompkins Co.
	Judson C. Nelson	Truxton.	
	T. C. Pomeroy.....	Cortlandville.	
	A. D. Reed	Marathon.	
	Marcellus R. Smith....	Cincinnatus.	
	J. D. Tripp	Virgil.	
	Ira D. Warner.....	McGrawville.	
	S. G. Warner.....	McGrawville.	
	Sumner C. Webb.....	Homer.	

DELAWARE COUNTY.

[Annual meeting in July.]

Officers.

Drs. John Calhoun, President.
S. S. Cartwright, Vice-President.
J. S. McClaury, Secretary.
Ira Wilcox, Treasurer.

Delegates to State Medical Society.

Dr. R. L. Waterbury, Dr. T. J. Ogden.

Delegates to American Medical Association.

Dr. A. Fitch, Dr. I. C. Bourne.

Members.

Drs. A. W. Abbott	Delhi.
O. M. Allaben	Middletown
M. J. Baker	Masonville.
G. P. Bassett	Downsville.
I. C. Bourne	Masonville.
O. L. Butts	Bloomville.
John Calhoun	Delhi.
Silas S. Cartwright	Roxbury.
A. Fitch	Delhi.
S. Forman	Bloomville.
Charles M. Frisbie	Brushland.
E. T. Gibbs	Kortright.
S. D. Higgins	Deposit.
Calvin Howard	Delhi.
Ferris Jacobs	Delhi.
J. G. Laing	Downsville.
A. McClaury	Hobart.
J. S. McClaury	Walton.
J. S. McNaught	Hobart.
A. P. Mann	Meredith.
D. H. Mann	Delhi.
J. Newkirk	Roxbury.
H. E. Ogden	Walton.
T. J. Ogden	Walton.
S. C. Pettingill	Hancock.
C. E. Stebbins	Franklin.

Drs. C. S. Taft ..... Cannonsville.
R. L. Waterbury ..... Margaretsville.
Thomas Wight ..... Andes.
Ira Wilcox ..... Franklin.

DUTCHESS COUNTY.

[Annual meeting, second Wednesday in June, at Washington Hollow. Semi-annual meeting, second Wednesday in January, at Poughkeepsie.]

OFFICERS.

Drs. Lewis H. White, President.
Desault Guernsey, Vice-President.
Alfred Hasbrouck, Secretary and Treasurer.

Delegates to State Medical Society.

Dr. Thomas Hammond, Dr. M. R. Holbrook.

MEMBERS.

Drs. Charles H. Andrus	9 Catherine	Poughkeepsie.
Edwin Barnes	Pleasant Plains.	
Edward L. Beadle	N. Avenue.....	Poughkeepsie.
Charles H. Berry.....	Dover Plains.	
J. Stirling Bird	Hyde Park.	
Edward C. Bolton.....	Academy	Poughkeepsie.
Paul R. Brown	Salt Point.	
C. N. Campbell	32 Washington	Poughkeepsie.
N. M. Carter	48 Cannon.....	do
William J. Conklin....	Fishkill.	
John R. Cooper.....	11 Garden	Poughkeepsie.
Elvy Deyo	137 Main	do
John H. Doughty.....	Matteawan.	
I. N. Dwan	Pleasant Valley.	
William F. Fink	Sprout Creek.	
Theodore Fowler.....	East Fishkill.	
Stephen S. Green	La Grangeville.	
Desault Guernsey	Amenia.	
Thomas Hammond	Dover Plains.	
A. B. Harvey.....	239 Mill.....	Poughkeepsie.
Alfred Hasbrouck	17 Cannon.....	do
M. R. Holbrook	292 Main.....	do
A. H. Knapp	8 Canon.....	do
Austin La Monte	Hyde Park.	
F. D. Lente (honorary),	60 West 38th street ...	New York.

Drs. Elmore Losee.....	Bangall.	
Isaac N. Mead.....	Amenia.	
C. A. Nicholson.....	Beekman.	
M. C. Northrop	South Dover.	
John C. Payne.....	4 Vassar Row	Poughkeepsie.
Edw. H. Parker	Cannon, cor. Academy,	do
Henry Pearce	Pawlings.	
P. L. Pine	269 Mill.....	Poughkeepsie.
James O. Pingry.....	Mabbettsville.	
Sidney Stillman.....	Millerton.	
G. L. Sutton.....	East Fishkill.	
Charles H. Thompson..	Fishkill.	
John S. Thorn.....	Washington.	
Anthony Underhill....	New Hackensack.	
A. E. Van Duser.....	8 Cannon.....	Poughkeepsie.
Isaac F. Van Vliet	Rhinebeck.	
Richard A. Varick	Poughkeepsie.	
D. W. Webb	339 Main	Poughkeepsie.
Lewis H. White	Fishkill.	
John Young.....	Fishkill Landing.	

ERIE COUNTY.

[Regular meetings, second Tuesday in January and June.]

At the annual meeting of Erie County Medical Society, held in Buffalo, January 8, 1867, the following was passed unanimously:

"*Resolved*, That the secretary publish a list of the officers and resident members of this society, with section 3 of article 7 of the by-laws, in a form convenient for reference:

"Art. VII, § 3. No member of this society shall conceal his art of curing diseases, or pretend to any nostrum, or superior knowledge or skill in the treatment of diseases generally; nor shall any member professionally consult or attend patients with any known quack, or any person professing the healing art who is not regularly authorized by the laws of the State to practice physic or surgery, or both; or with any physician who does not attach himself to the Medical Society after residing in the county one year. And if any member, after a fair examination, shall be found to have been guilty of a violation of either clause of this section, he shall be fined five dollars; and upon a second conviction of a similar violation, he shall be fined ten dollars; and upon a third conviction he shall be placed upon trial for expulsion."

OFFICERS.

Drs. J. F. Miner, President.
William Gould, Vice-President.
M. G. Potter, Secretary.
William Ring, Treasurer.
James B. Samo, Librarian.

Primary Board.

Drs. E. R. Barnes, H. R. Hopkins, Drs. William C. Phelps, Frank Abbott.

Censors.

Drs. Sanford Eastman, M. G. Potter, Drs. John Boardman, William O. Taylor, Dr. H. Nichell.

Delegates to State Medical Society.

Drs. S. F. Mixer, O. K. Parker, Drs. Jabez Allen, J. B. Samo, Dr. John Hauenstein.

MEMBERS.

Drs. F. W. Abbott	114 Niagara	Buffalo.
George Abbott	White's Corners.	
Jabez Allen	Aurora.	
George Ayer	330 Elk	Buffalo.
C. H. Baker	183 Palmer	do
P. Barber	Boston.	
E. R. Barnes	16 Exchange	Buffalo.
Josiah Barnes	16 Exchange	do
F. W. Bartlett	112 Ellicott	do
O. W. Beckwith	Evans.	
E. S. Bissell	Buffalo Plains.	
John Boardman	16 Court	Buffalo.
Lorin F. Bois	Griffin's Mills.	
C. W. Bourne	Boston.	
J. N. Brown	115 Franklin	Buffalo.
Otto Burger	570 Washington	do
John J. Burke	7 Terrace	do
G. N. Burwell	Buffalo.	
R. C. Campbell	North Buffalo.	
Walter Cary	184 Delaware	Buffalo.

Drs. D. E. Chace	130 Pearl	Buffalo.
John P. Cole	Sardinia.	
B. H. Colegrave	Sardinia.	
C. W. Colyer	371 Hudson	Buffalo.
H. M. Congar	231 Pearl	do
A. H. Crawford	East Hamburg.	
John Cronyn	Swan cor. Franklin	Buffalo.
R. J. Curtis	Angola.	
B. H. Daggett	8 S. Division	Buffalo.
C. L. Dayton	North Buffalo.	
L. P. Dayton	North Buffalo.	
D. Devening	470 Michigan	Buffalo.
Conrad Diehl	496 Main	do
Elias T. Dorland	East Hamburgh.	
Sanford Eastman	125 West Mohawk	Buffalo.
Henry S. Elwood	Buffalo.	
Carlos Emmons	Springville.	
M. B. Folwell	8 S. Division	Buffalo.
William H. Gail	Willink.	
H. D. Garvin	Buffalo.	
C. C. F. Gay	180 Franklin	Buffalo.
G. U. Gleason	Buffalo.	
P. Goodyear	Alden.	
William Gould	219 Pearl	Buffalo.
J. C. Greene	444 Elk	do
George Hadley	1355 Main	do
E. G. Harding	182 Main	do
C. W. Harvey	S. Division, cor. Washington,	do
L. F. Harvey	S. Division, cor. Washington,	do
John Hauenstein	499 Washington	do
A. J. Haughton	Tonawanda.	
F. F. Hershey	Tonawanda.	
J. D. Hill	192 Delaware	Buffalo.
H. R. Hopkins	9 W. Swan	do
H. B. Horton	Eden.	
F. F. Hoyer	Tonawanda.	
C. B. Hutchins	39 Niagara	Buffalo.
Augustus Jansen	13 E. Seneca	do
George Johnson	1305 Niagara	do
Thomas M. Johnson	18 S. Division	do
Andrew Kamerling	23 W. Swan	do

Drs. J. E. King	Old P. O. Building	Buffalo.
Lewis Krombeine	246 Elm	do
G. H. Lapham	Aurora.	
Henry Lapp	Clarence.	
Edward Little	205 Main	Buffalo.
E. R. Lockman	Buffalo.	
H. N. Loomis	115 Franklin	Buffalo.
Thomas Lothrop	Black Rock.	
U. C. Lynde	Springville.	
Gustavus E. Mackey	46 Franklin	Buffalo.
J. F. Miner	61 S. Division	do
S. F. Mixer	124 E. Swan	do
A. G. Morey	Buffalo.	
H. B. Murray	Tonawanda.	
W. D. Murray	Tonawanda.	
B. S. Myers	Clarence Centre.	
C. F. A. Nichell	Buffalo.	
Henry Nichell	80 Sycamore	Buffalo.
S. E. S. H. Nott	White's Corners.	
E. C. W. O'Brian	119 Main	Buffalo.
Jesse W. Parker	1572 Main	do
L. B. L. Parker	Akron.	
O. K. Parker	Clarence.	
George W. Pattison	94 Main	Buffalo.
William C. Phelps	378 Main	do
J. S. Potter	Lancaster.	
Milton G. Potter	150 Allen	Buffalo.
G. F. Pratt	9 W. Swan	do
J. B. Pride	Alden.	
William Ring	13 S. Division	Buffalo.
Thomas F. Rochester	216 Franklin	do
Albert S. Rogers	81 Morgan	do
J. B. Samo	13 S. Division	do
William R. Scott	78 W. Mohawk	do
M. H. Shaw	65 Ellicott	do
James Sloan	36 E. Swan	do
George D. Slocum	1848 Niagara	do
J. S. Smith	733 Ellicott	do
R. G. Snow	31 Church	do
J. F. Stevens	175 Swan	do
E. Storck	333 Ellicott	do

Drs. P. H. Strong	120 Niagara	Buffalo.
G. Sweetland	Evans.	
Hiram Taber	Marilla.	
E. Tobie	14 E. Mohawk	Buffalo.
J. S. Trowbridge	178 Niagara	do
William Van Pelt	Williamsville.	
Jacob W. Van Peyma	Lancaster.	
S. W. Wetmore	496 Main	Buffalo.
A. R. White	Tonawanda.	
James P. White	674 Main	Buffalo.
B. T. Whitney	307 Main	do
A. Williams	5 Chippewa	do
Matthew Willoughby	66 Erie	do
Charles Winne	367 Washington	do
C. C. Wyckoff	8 S. Division	do

ESSEX COUNTY.

[Annual meeting fourth Tuesday in June, at Elizabethtown; other meetings at such times and places as voted at annual meeting.]

Officers.

Drs. Silvester S. Holcomb, President.
E. F. Edgerley, Vice-President.
Safford E. Hale, Secretary and Treasurer.

Censors.

Dr. J. S. McGregor, Dr. M. J. Moore,
Dr. E. D. Ferguson.

Auditor.

Dr. C. E. Nichols.

Delegate to State Medical Society.

Dr. E. D. Ferguson.

Members.

Drs. Lyman Barton	Willsboro.
Wesley Davis	——
Linton J. Deming	Wadham's Mills.
J. J. Desnoyer	Crown Point.
Benjamin Dewey	Moriah.
E. F. Edgerley	Moriah Centre.
Ira W. Fisk	——

Drs.	Everard D. Ferguson ..	Essex.
	Safford E. Hale	Elizabethtown.
	Asa P. Hammond. ...	Keeseville.
	Silvester S. Holcomb ..	Jay.
	Frank M. Hopkins	Keeseville.
	E. W. Kent	Moriah.
	John H. McGregor....	——
	Matthew J. Moore	Crown Point Centre.
	Joseph B. Murray.....	Moriah Centre.
	T. B. Nichols.....	——
	Charles E. Nichols	Port Henry.
	Amos R. Nickerson ...	Ticonderoga.
	John N. Oliver	Essex.
	Dudley Palmer	Schroon Lake.
	Abiathar Pollard.....	Westport.
	Norbert Provencher ...	Crown Point.
	William H. Richardson,	Westport.
	Conant Sawyer	Ausable Forks.
	Samuel Shumway	Whitehall.
	F. H. Stevens	——
	George T. Stevens.....	Albany.
	Warren Van Steenberg,	——
	Rollin E. Warner	Port Henry.

FRANKLIN COUNTY.

[Annual meeting, third Tuesday in January, at Malone. Semi-annual, at Chateaugay, third Tuesday in July.]

OFFICERS.

Drs. Calvin Skinner, President.
William Mott, Vice-President.
Sidney P. Bates, Secretary.
George Howe, Treasurer

Censors.

Dr. Theodore Gay, Dr. D. W. Jones,
Dr. H. S. Farnsworth.

Delegate to State Medical Society.

Dr. D. W. Jones.

MEMBERS.

Drs.	Jonas G. Barney.....	——
	Sidney P. Bates.....	Malone.

Drs. Luther A. Burnham ... ——
J. A. Darling..... Nicholville.
H. S. Farnsworth ..... Chateaugay.
T. Gay ..... Malone.
William Gillis ..... Fort Covington.
George Howe ..... Chateaugay.
D. W. Jones..... Ellenburgh.
S. P. Morrison..... Chateaugay.
William Mott ..... Chateaugay.
Isaac Moxley ..... Bangor.
J. S. Phillips..... Malone.
C. Skinner ..... Malone.
—— Stone..... Burke.
—— Wentworth..... Ellenburgh.
A. A. Wilber..... Constable.
—— Wilding..... Clinton Mills.

FULTON COUNTY.

[Annual meeting June 29th. Semi-annual meeting January 16th, both at Johnstown.]

Officers.

Drs. William Chambers, President.
Francis Burdick, Vice-President.
P. R. Furbeck, Recording Secretary.
Eugene Beach, Corresponding Secretary.
Jehiel Lefler, Treasurer.

Delegate to State Medical Society.

Dr. Eugene Beach.

Members.

Drs. Eugene Beach ..... Gloversville.
Francis Burdick ..... Johnstown.
—— Certon..... Fish House.
William Chambers .... Broadalbin.
John Edwards ..... Ephrata.
P. R. Furbeck..... Gloversville.
W. L. Johnson ..... Johnstown.
Jehiel Lefler ..... Johnstown.
G. C. Newton ..... Gloversville.
W. S. Young ..... Johnstown.

GENESEE COUNTY.

OFFICERS.

Drs. B. H. Benham, President.
S. C. Bateman, Vice-President.
L. L. Tozier, Secretary.
L. B. Cotes, Treasurer.

Censors.

Drs. J. R. Cotes, Drs. J. W. Warner,
E. B. Lonsberry, F. L. Stone.
Dr. G. W. Croff.

Delegate to State Medical Society.

Dr. J. R. Cotes.

Delegates to American Medical Association.

Dr. A. G. Ellenwood, Dr. J. W. Warner,
Dr. M. J. Munger.

MEMBERS.

Drs. S. Barrett	Le Roy.
S. C. Bateman	Alabama.
A. Bellington	Corfu.
B. H. Benham	Batavia.
J. S. Billings	Corfu.
D. C. Chamberlain	Le Roy.
J. R. Cotes	Batavia.
L. B. Cotes	Batavia.
F. W. Crane	Corfu.
G. W. Croff	Bethany.
O. R. Croff	Bethany.
A. G. Ellenwood	Attica.
A. W. Fuller	Le Roy.
N. Horning	Alabama.
A. P. Jackson	Oakfield.
E. B. Lonsbury	Byron.
E. W. Marsh	Darien.
J. V. Mullin	Alexander.
M. J. Munger	Bergen.
W. Pardee	Oakfield.
L. R. Parmlee	East Pembroke.

Drs. M. E. Potter ..... Attica.
J. Reno ..... Corfu.
John Root ..... Batavia.
William B. Sprangue .. Pavilion.
F. L. Stone..... Stafford.
M. W. Townsend..... Bergen.
L. L. Tozier ..... Batavia.
J. W. Warner ..... Elba.
J. C. Watson ..... Varysburgh.
R. Williams ..... Le Roy.

GREENE COUNTY.

[Annual meeting, at Cairo, second Tuesday in July. Semi-annual meeting second Tuesday in January.]

OFFICERS.

Drs. E. R. Mackey, President.
Bradley S. McCabe, Vice-President.
Walter B. Chase, Secretary and Treasurer.

Censors.

Drs. Levi King, Drs. E. R. Mackey,
G. Botsford, C. V. Barnett,
Dr. E. Eckler.

Delegate to State Medical Society.

Dr. E. Whittlesey.

Delegates to the American Medical Association.

Dr. C. V. Barnett, Dr. E. R. Mackey.

MEMBERS.

Drs. C. V. Barnett..... Coxsackie.
C. R. Benham ..... Prattsville.
Gideon Botsford ..... Greenville.
Hervey Camp ..... Windham Centre.
Walter B. Chase ..... Windham Centre.
J. B. Cowles ..... Durham.
E. Eckler ..... Cairo.
Nelson Fanning..... Catskill.
Nelson Fanning, Jr. ... Leeds.
Thomas Fitch ..... Prattsville.
Frederick S. Greene ... Coxsackie.

Drs. Levi King..... Cairo.
Bradley S. McCabe.... Greenville.
E. R. Mackey..... Catskill.
W. H. March..... West Kill.
Willard Marsh..... Prattsville.
W. H. Mead ..... Ashland.
George H. Noble ..... Cairo.
P. I. Stanley ..... Windham Centre.
J. B. Van Dyck ..... Coxsackie.
A. C. Westervelt..... Palensville.
J. H. Wheeler..... Athens.
E. Whittlesey ..... Durham.

HAMILTON COUNTY.

No county society.

HERKIMER COUNTY.

[Annual meeting first Tuesday in June.]

OFFICERS.

Drs. James E. Casey, President.
H. A. France, Vice-President.
D. M. Devendorf, Secretary.
H. H. Greene, Treasurer.

MEMBERS.

Drs H. G. Barney..... Brockett's Bridge.
A. J. Brown..... Newport.
James E. Casey..... Mohawk.
H. J. Cristman ..... Columbia.
David M. Devendorf .. Herkimer.
Andrew F. Doolittle .. Herkimer.
Eli Fox..... Mohawk.
H. A France ..... Poland.
H. H. Greene ..... Paine's Hollow.
William H. Harter .... Herkimer.
Abram Haun ..... Little Falls.
I. B. Holcomb ..... Newport.
Silas A. Ingham ..... Little Falls.
H. B. Mahon ..... Ilion.
Adam Miller ..... Jordanville.
S. R. Millington ..... Poland.

Drs. W. H. H. Parkhurst... Frankfort.
Vaughn C. Potter ..... Starkville.
Peter Pryne..... Herkimer.
James M. Rose ..... West Winfield.
John P. Sharer ..... Little Falls.
Griffen Sweet ..... Fairfield.
E. S. Walker ..... Ilion.

JEFFERSON COUNTY.

[Annual meeting first Tuesday in January. Semi-annual meeting first Tuesday in June.]

Officers.

Drs. Ira H. Abell, President.
William C. Bailey, Vice-President.
Frederick B. A. Lewis, Secretary.
William R. Trowbridge, Treasurer.

Censors.

Drs. Robert Clink, Drs. George N. Hubbard,
M. J. Hutchins, J. M. Crawe,
Dr. George S. Sabin.

Delegates to State Medical Society.

Dr. H. G. P. Spencer, Dr. H. S. Hendel.

Delegates to St. Lawrence County Society.

Dr. Ira H. Abell, Dr. F. B. A. Lewis,
Dr. William R. Trowbridge.

Members.

Drs. Ira H. Abell ..... Antwerp.
Wm. C. Bailey ..... Adams Centre.
James K. Bates..... Watertown City.
Frederick Bott..... Lafargeville.
Eber S. Carlisle..... Plessis.
Charles A. Catlin ..... Alexandria.
E. A. Chapman ..... Henderson.
Robert Clink..... Redwood.
James M. Crawe ..... Watertown.
N. M. Davidson..... Theresa.
E. G. Derby..... Antwerp.
Luke E. Frame ..... Depauville.
Solomon V. Frame .... Clayton.

Drs. Alonzo H. Gordinier .. Oxbow.
H. S. Hendee..... Carthage.
George N. Hubbard ... Carthage.
M. J. Hutchins ..... Redwood.
H. W. Jewett ..... Chaumont.
Charles M. Johnson ... Cape Vincent.
Perley H. Johnson .... Adams.
F. B. A. Lewis..... Watertown City.
Sheldon D. Lord..... Smithville.
Lafayette Mason ..... Evans' Mills.
William P. Massey .... Brownsville.
Charles Parker ..... Three Mile Bay.
James T. Peeden ..... Carthage.
Ezra V. Pratt..... Chaumont.
George S. Sabin ..... Carthage.
Emerson Seymour..... Natural Bridge.
H. G. P. Spencer..... Watertown City.
James D. Spencer..... Watertown City.
H. M. Stevens ..... Lafargeville.
Henry W. Streeter .... Watertown City.
Anson S. Thompson... Ellis Village.
William R. Trowbridge, Watertown City.
Truman Tuttle ..... Rodman.

KINGS COUNTY.

[The annual meeting of this Society will hereafter be held on the third Tuesday of January, and the stated monthly meetings on the third Tuesday of other months. At the fiftieth annual meeting, held April 10th, 1871, the following officers were elected for the ensuing year.]

OFFICERS.

Drs. J. H. Hobart Burge, President.
John S. Young, Vice-President.
Richard M. Wyckoff, Secretary.
George K. Smith, Assistant Secretary.
J. S. Prout, Treasurer.
W. W. Reese, Librarian.
Charles H. Giberson, Orator.
B. A. Segur, Alternate.

Censors.

Drs. Wm. H. Thayer, Drs. Ponce M. Nichtern,
J. T. Conkling, C. L. Mitchell,
Dr. Richard M. Buell.

Delegates to State Medical Society.

Drs. J. S. Young,	Drs. E. N. Chapman,
J. S. Prout,	R. C. Stiles,
J. S. Hawley,	W. W. Reese,
J. A. Brady,	W. E. Mulhallon,
J. W. Ostrander,	W. C. Otterson,
Charles Corey,	Alex. Hutchins.

Delegates to American Medical Association.

Drs. E. R. Squibb,	Drs. C. H. Schapps,
E. W. Carpenter,	B. A. Segur,
S. G. Armor,	L. D. Mason,
A. Haslett,	S. F. Speir,
H. Fearn,	A. N. Bell,
P. M. Nichtern,	J. W. Ostrander,
J. C. Snively,	D. A. Dodge,
H. S. Smith,	John Byrne,
James Crane,	C. R. McClellan.

MEMBERS.

Drs. Daniel Ambrose	99	Second Place	Brooklyn.
Samuel G. Armor		Pierrepont House	do
George F. Ayling	413	Kent avenue	do
George W. Baker	48	Bedford avenue (E. D.)	do
John Ball	177	Montague street	do
Isaac H. Barber	36	Lafayette avenue	do
Richard Barthelmess	98	Dean street	do
Homer L. Bartlett		Flatbush.	
William H. Bates	50	Sands street	Brooklyn.
George M. Beard	177	Montague street	do
William F. Bedell	372	Degraw street	do
A. Nelson Bell	175	Clinton street	do
George I. Bennet	230	Adams street	do
James Bigelow	129	S. Oxford street	do
Francis W. Bird	214	Smith street	do
James R. Bird	183	Putnam avenue	do
James A. Blanchard	695	Warren street	do
William A. Bliss	292	Eighteenth street	do
Dominick G. Bodkin	122	Sands street	do
Charles A. Boner	30	Prospect street	do
John A. Brady	27	Fourth street (E. D.)	do

Drs.	Samuel J. Brady	146 Fourth street (E. D.)	Brooklyn.
	Thomas A. Brady	444 Kent avenue	do
	George Z. Bretz	139 Clinton street	do
	William K. Brown	128 Montague street	do
	Richard M. Buell	621 Third avenue	do
	William M. Bullard	73 Lafayette avenue	do
	Edward S. Bunker	280 Henry street	do
	J. H. Hobart Burge	64 Livingston street	do
	John Byrne	314 Clinton street	do
	John J. Caldwell	206 Warren street	do
	Elijah W. Carpenter	29 Remsen street	do
	Arnold W. Catlin	43 St. James' place	do
	Thomas G. Catlin	10 Sidney place	do
	Edwin N. Chapman	95 Pierrepont street	do
	Samuel B. Childs	470 Grand avenue	do
	Charles F. Clark	306 Union street	do
	Joseph E. Clark	340 Clinton street	do
	George Cochran	149 Pierrepont street	do
	Joseph P. Colgan	329 Jay street	do
	Edward G. Colton	280 Court street	do
	Fred. H. Colton	136 Montague street	do
	John T. Conkling	143 Remsen street	do
	Chauncey L. Cooke	98 Pineapple street	do
	Thomas P. Corbally	622 Myrtle avenue	do
	Job Corbin	943 Gates avenue	do
	Charles Corey	411 Carlton avenue	do
	Peter R. Cortelyou	306 Greene avenue	do
	James Crane	123 Pacific street	do
	Alpheus B. Crosby	L. I. College Hospital.	do
	Henry J. Cullen	166 Montague street	do
	Nelson S. Drake	191 Clinton street	do
	Myron J. Davis	65 Livingston street	do
	Thomas N. De Bowes	277 Baltic street	do
	Fred. C. De Mund	New Utrecht.	
	Daniel A. Dodge	163 Congress street	Brooklyn.
	William H. Dudley	301 Henry street	do
	Peter J. Dwyer	228 Baltic street	do
	James L. H. Elmendorf,	142 Greene avenue	do
	James L. Farley	83 Henry street	do
	Herbert Fearn	196 Clermont avenue	do
	Benj. F. Fessenden	380 Adelphi street	do

Drs. S. Nelson Fisk	89 Fifth street, (E. D.)	Brooklyn.
Nathaniel Ford	514 Henry street	do
John N. Freeman	80 Hanson place	do
William H. Gardiner	133 Clinton street	do
Charles H. Giberson	188 Remsen street	do
George Gilfillan	73 Main street	do
William Gilfillan	169 Clinton street	do
William J. Gilfillan	73 Main street	do
John C. Goodridge, Jr.,	485 Clinton avenue	do
Francis Goodwin	394 Bedford avenue	do
J. Elmore Gregory	348 Hicks street	do
Stephen C. Griggs	528 Classon avenue	do
Albert C. Hallam	518 Grand street (E. D.)	do
Arnold Hallett	157 Clinton street	do
J. Condit Halsey	21 Concord street	do
John W. Hamilton	883 Myrtle avenue	do
William H. Harlin	887 Pacific street	do
Samuel Hart	382 Atlantic street	do
Audley Haslett	115 Clinton street	do
James S. Hawley	55 Joralemon street	do
James H. Henry	431 Clinton avenue	do
Richard G. Hesse	75 Livingston street	do
George G. Hopkins	175 Gates avenue	do
Alexander Hutchins	796 De Kalb avenue	do
Joseph C. Hutchison	479 Clinton avenue	do
Joel W. Hyde	188 Schermerhorn street	do
Charles Jewett	399 Gates avenue	do
Charles C. Jewett	122 Hicks street	do
John G. Johnson	81 Henry street	do
Richard Klawitter	740 Flushing avenue	do
D. Stevens Landon	101 Clark street	do
Alfred Large	24 College place	do
William Law, Jr	368 Clinton street	do
John T. G. Leach	384 Court street	do
N. W. Leighton	174 S. Eighth street, (E. D.)	do
Alexander Little	54 Myrtle avenue	do
George Marvin	94 Pineapple street	do
Lewis D. Mason	173 Joralemon street	do
Theodore L. Mason	173 Joralemon street	do
Alex. R. Matheson	263 Hoyt street	do
Arthur Mathewson	17 Clinton street	do

Drs. Nathaniel Matson	283 Franklin avenue.....	Brooklyn.
Henry C. Matthews ...	Cor. B'way and Ralph ave.,	do
James J. McCarty.....	78 Bond street.....	do
Chris. R. McClellan ...	119 Pacific street.....	do
William McCollum....	177 Gates avenue	do
Samuel P. McIlroy	530 Hicks street	do
Henry McManus.....	77 Wyckoff street	do
Chauncey L. Mitchell..	129 Montague street.....	do
William E. Mulhallon..	111 S. Oxford street	do
Homer G. Newton	17 Clinton street.....	do
Ponce M. Nichtern....	68 Degraw street.....	do
Cornelius Olcott	104 Bedford avenue (E. D.)	do
Samuel H. Olmstead...	192 Union street.....	do
Robert Ormiston.....	75 Hanson place	do
Ferdinand W. Ostrander	95 Clark street.....	do
George A. Ostrander ..	20 Greene avenue.....	do
John W. Ostrander....	95 Clark street.....	do
Andrew Otterson	179 Washington street....	do
William C. Otterson...	155 Pierrepont street	do
Ulric Palmedo.....	334 Pearl street.....	do
Patrick Pendergast....	196 Smith street	do
Charles H. Potter.....	494 Third avenue	do
Jonathan S. Prout	148 State street.....	do
Wm. H. Randolph ...	434 Herkimer street.....	do
William W. Reese	193 Joralemon street	do
Matthew F. Regan	232 Bridge street.....	do
Robert R. Rhodes.....	949 Myrtle avenue	do
Frank W. Rockwell ...	104 Nevins street	do
Alexander J. Rooney ..	615 Third avenue	do
Otto Rotton.....	20 Hanson place	do
Charles Rowland.....	13 Sands street	do
Cornelius H. Schapps..	23 Bedford avenue (E. D.	do
Teunis Schenck.....	Kings Co. Hospital...	do
Claude B. Schlatter....	256 Columbia street	do
Benjamin A. Segur....	17 Clinton street.....	do
A. Warner Shepard ...	124 Willoughby street	do
John G. Shuttleworth..	270 Cumberland street....	do
Alex. J. C. Skene	148 State street	do
George K. Smith.....	18 Clinton street.....	do
Horatio S. Smith.....	195 Harrison street.....	do
Joseph C. Snively.....	28 Clinton street	do

Drs. Orson C. Sparrow.....	481 Classon avenue.....	Brooklyn.
S. Fleet Speir	162 Montague street.....	do
Edward R. Squibb	152 Columbia Heights	do
Charles J. Stahl.....	16 Cook street (E. D.) ...	do
John H. Sterling.....	67 Smith street	do
James Stewart.....	329 Adelphi street	do
R. Cresson Stiles.....	354 Court street	do
Richard H. Stone	131 Jay street	do
John D. Sullivan.....	143 Macon street.....	do
Samuel J. Swalm	159 Duffield street	do
William Swift	488 Grand avenue.....	do
Charles A. H. Szigethy,	151 Harrison street.....	do
Harrison Teller.....	23 S. Oxford street	do
Charles H. Terry	133 Cambridge place	do
Wm. Henry Thayer ...	35 Smith street	do
J. Sullivan Thorne	53 Sands street.....	do
Noah Tittemore.....1105	De Kalb avenue.....	do
Joseph M. Turner.....	413 Henry street.....	do
Henry C. Turner	2 Lafayette avenue	do
John Van Ness	129 Franklin avenue.....	do
Albert Vickers	259 Clinton street.....	do
George Wackerhagen ..	366 Clinton street	do
Jerome Walker	808 Gates avenue	do
William Wallace.....	183 Congress street.....	do
James Watt.....	329 Union street	do
E. Arnold Whaley	257 Clinton street.....	do
G. Rankine White	139 Pacific street.....	do
Jonathan A. White....	11 Greene avenue	do
Hiram B. White	11 Greene avenue	do
Jarvis S. Wight.....	115 Pacific street.....	do
Joshua G. Wilbur.....	413 Adelphi street	do
Thomas Wilde.....	35 Fifth avenue.....	do
William H. Williams ..	607 Third avenue	do
A. Duncan Willson ...	44 Gates avenue	do
Fred. W. Wunderlich..	160 Court street	do
Richard M. Wyckoff...	259 Lafayette avenue	do
John S. Young	119 Johnson street	do
John L. Zabriskie	Flatbush.	

LEWIS COUNTY.

[Annual meeting fourth Tuesday in December. Semi-annual meeting fourth Tuesday in June.]

OFFICERS.

Drs. Charles D. Budd, President.
F. B. Hough, Vice-President.
A. H. Crosby, Secretary.
F. A. Crane, Treasurer.

Censors.

Dr. F. A. Crane, Dr. D. C. Dewey,
Dr. A. H. Crosby.

Delegate to State Medical Society.

Dr. F. B. Hough.

MEMBERS.

Drs. Seth Adams	Lowville.
F. Bischoff	Lowville.
B. S. Budd.	Constableville.
Charles D. Budd	Turin.
F. A. Crane	Lowville.
A. H. Crosby	Lowville.
D. C. Dewey	Turin.
Alexander R. Gebbie	Lowville.
F. B. Hough	Lowville.
Otis Shaw	Copenhagen.
S. P. Uhline	Lowville.

LIVINGSTON COUNTY.

[Annual meeting second Tuesday in June. Semi-annual meeting second Tuesday in January.]

OFFICERS.

Drs. William B. Alley, President.
Charles H. Richmond, Vice-President.
Jay L. Greene, Secretary.
W. E. Lauderdale, Treasurer.

Censors.

Drs. J. C. Paterson, Drs. J. G. Filkins,
J. B. Losey, R. J. Menzie,
Dr. A. A. Gibbs.

Delegate to State Medical Society.

Dr. F. M. Perine.

Delegate to American Medical Association.

Dr. S. L. Endress.

Alternate.

Dr. L. J. Ames.

MEMBERS.

Drs. William B. Alley ..... Nunda.
L. J. Ames..... Mount Morris.
George H. Bennett.... Lima.
D. H. Bissell ..... Geneseo.
Z. H. Blake ..... Dansville.
A. C. Campbell..... Mount Morris.
P. T. Caton ..... West Avon.
E. G. Chase ..... Geneseo.
John Craig..... Geneseo.
John R. Craig ..... Mumford, Monroe county.
S. G. Ellis ..... Lima.
S. L. Ellis..... Lima.
S. L. Endress ..... Dansville.
J. G. Filkins ..... Cuylerville.
A. A. Gibbs..... Hemlock Lake.
J. W. Gray ..... Avon.
Jay L. Greene..... Hemlock Lake.
Z. W. Joslyn ..... Mount Morris.
J. E. Jenks ..... East Avon.
B. F. Kneeland ..... Nunda Station.
W. E. Lauderdale ..... Geneseo.
J. B. Losey ..... Conesus Centre.
R. J. Menzie ..... Caledonia.
William Nisbett ..... Avon.
R. A. Patchin ..... Perry, Wyoming county.
J. C. Patterson ..... South Livonia.
F. M. Perine ..... Dansville.
J. B. Purchase..... Scottsburgh.
C. H. Richmond ..... Livonia.
W. C. Rowland..... Lakeville.
J. B. Sabin..... .... Nunda.
W. Sellew ..... Moscow.

MADISON COUNTY.

[Annual meeting, second Tuesday in July.]

OFFICERS.

Drs. A. L. Saunders, President.
G. Mott Throop, Vice-President.
Wm. Taylor, Secretary and Treasurer.

Censors.

Drs. R. H. Gray, J. D. Smith, F. W. Root, H. W. Carpenter, Dr. H. S. Crandall.

Delegates to State Medical Society.

Dr. F. W. Root, Dr. R. H. Gray.

Delegates to American Medical Association.

Drs. H. S. Crandall, H. P. Miller, A. L. Saunders, R. H. Gray.

MEMBERS.

Drs. Milton Barnett	Oneida.
Frank D. Beebe	Hamilton.
Gilbert Birdsall	North Brookfield.
H. W. Carpenter	Oneida.
W. M. Carpenter	Erieville.
J. K. Chamberlayne	Utica, Oneida county.
Amos Chesebrough	South Brookfield.
Silas S. Clark	De Ruyter.
H. S. Crandall	Leonardsville.
A. Ford	Cazenovia.
I. N. Goff	Cazenovia.
R. H. Gray	Eaton.
Levi P. Greenwood	Erieville.
George W. Harris	Georgetown.
Milton B. Jarvis	Canastota.
E. W. Loveland	Oneida.
V. W. Mason	Canastota.
F. B. Maybury	Binghamton.
H. P. Mead	Morrisville.
H. P. Miller	Eaton.
D. Mitchell	Cazenovia.

Drs. E. S. Mumford..... De Ruyter.
G. B. Munger ..... Perryville.
S. M. Potter..... Cazenovia.
A. G. Purdy ..... Oneida.
John Putnam..... Madison.
F. W. Root ..... East Hamilton.
A. L. Saunders ..... Brookfield.
Ira Spencer..... De Ruyter.
William Taylor ..... Munnsville.
G. Mott Throop..... Lebanon.
James Whitford ..... Onondaga Valley.
——— Whitmen..... Oneida Castle.

MONROE COUNTY.

[Annual meeting second Wednesday in June, at Rochester.]

Officers.

Drs. H. W. Dean, President.
W. S. Ely, Vice-President.
David Little, Secretary.
E. V. Stoddard, Treasurer.

Delegates to State Medical Society.

Dr. George Swinburne, Dr. W. S. Ely,
Dr. L. Knichling.

Members.

Drs. G. Arink	35 Andrews	Rochester.
E. W. Armstrong	14 North Washington.....	do
Azel Backus.....	59 State	do
Joseph Bangs	Chili.	
H. W. Bradley.....	75 Main	Rochester.
Samuel B. Bradley	Greece.	
W. H Briggs	75 Main	Rochester.
A. B. Carpenter	Greece.	
Davis Carpenter	Brockport.	
George G. Carroll.....	Buffalo	Rochester.
James W. Casey	15 Sophie	do
M. S. Cole	Ogden.	
T. B. Collins	74 Main	Rochester.
J. W. Craig.....	Churchville.	
H. W. Dean.....	33 North Fitzhugh.....	Rochester.

Drs. Oran A. Dean	Hamlin.	
J. S. Denman	Scottsville.	
Fred. Douglas	53 Main	Rochester.
T. B. V. Durand	Fairport.	
W. S. Ely	69 South Fitzhugh	Rochester.
W. W. Ely	69 South Fitzhugh	do
Freeman Edson	Scottsville.	
L. E. Franks	Rochester.	
F. B. Gallery	Rochester.	
B. F. Gilkeson	59 State	Rochester.
George W. Hanna	Mendon.	
J. H. Hazeltine	Henrietta.	
George H. Hess	Rochester.	
T. L. F. Hillman	Greece.	
Samuel Holman	North Parina.	
B. L. Hovey	35 South Fitzhugh	Rochester.
A. M. Jones	Charlotte.	
Jonas Jones	R. C. Hospital	Rochester.
L. Knichling	59 State	do
W. C. Lacy	Scottsville.	
H. H. Langworthy	79 State	Rochester.
David Little	82 Plymouth avenue	do
J. C. Lung	79 State	do
L. McKay	State, corner Brown	do
C. C. H. Miller	19 South Clinton	do
H. B. Miner	Rochester.	
J. S. Monroe	Rochester.	
H. F. Montgomery	44 Spring	Rochester.
E. M. Moore	63 South Fitzhugh	do
G. W. H. Paduva	Rochester.	
S. A. Pierce	Main	Rochester.
A. Pratt	63 Buffalo	do
R. C. Reynolds	Pittsford.	
Charles E. Rider	84 State	Rochester.
P. F. Riechenbach	Buffalo, corner Exchange	do
W. C. Rogers	128 Buffalo	do
D. M. Shipman	79 State	do
W. C. Slayton	Ogden.	
Charles S. Starr	84 State	Rochester.
E. V. Stoddard	33 North Fitzhugh	do
George Swinburne	Jay	do

Drs. Ralph Thatcher ..... Brockport.
Charles Vaill ..... 128 State ..... Rochester.
H. D. Vosburg ..... Henrietta.
G. A. Wallace ..... Rochester.
J. F. Whitbeck ..... 37 North St. Paul..... Rochester.

MONTGOMERY COUNTY.

Officers.

Drs. Jeremiah Snell, President.
P. H. Burnap, Vice-President.
O. W. Smith, Secretary and Treasurer.

Censors.

Drs. Jacob G. Snell,
Charles H. Dievendorf,
A. Putnam,
Drs. D. L. Carroll,
Jeremiah Snell,
William H. Robb.

Delegate to State Medical Society.

Dr. Norman L. Snow.

Members.

Drs. Alexander Ayres ..... Fort Plain.
Douglass Ayres..... Fort Plain.
Ezra Barney ..... Minaville.
William H. Biggam ... Charleston.
I. I. Buckbee..... Fonda.
Joseph Burbeck..... Canajoharie.
P. H. Burnap..... Canajoharie.
Thompson Burton..... Fultonville.
D. L. Carroll ..... Amsterdam.
Charles Dievendorf.... Amsterdam.
Charles H. Dievendorf. Amsterdam.
Horatio Gilbert..... Fultonville.
R. Green ..... St. Johnsville.
E. Holmes ..... Tribes Hill.
James Merennes ..... Ames.
John Parr ..... Buel.
Darwin Potter..... Fort Plain.
A. Putnam..... Amsterdam.
George C. Raynor..... St. Johnsville.
William H. Robb ..... Amsterdam.

Drs. Oran W. Smith..... Fonda.
Jacob G. Snell..... Amsterdam.
Jeremiah Snell ..... Amsterdam.
Norman L. Snow..... Canajoharie.
Morgan Snyder ..... Fort Plain.
J. H. Stafford ..... Canajoharie.
L. Von St. George .... Canajoharie.
A. Wheelock ..... St. Johnsville.
Joseph White ..... Canajoharie.

NEW YORK COUNTY.

Officers.

Drs. Abraham Jacobi, President.
Austin Flint, Sr., Vice-President.
Alfred E. M. Purdy, Recording Secretary.
Bradford S. Thompson, Corresponding Secretary.
Joseph E. Janvrin, Treasurer.

Censors.

Drs. George T. Elliot,* Drs. Ellsworth Elliot,
John C. Peters, Thomas C. Finnell,
Dr. Stephen Rogers.

Standing committees for the year.

Library Committee.

Dr. T. S. Bahan, Dr. G. M. Beard,
Dr. R. J. O'Sullivan.

Committee on Intelligence.

Drs. B. S. Thompson, Drs. Wm. T. White,
J. C. Smith, R. Newman,
J. B. Hunter, B. F. Dawson,
A. H. Smith, S. Caro,
N. Folsom, C. S. Wood,
Dr. F. A. Castle.

Meteorological Committee.

Drs. D. H. Goodwillie, Drs. John Messenger,
F. E. Hutchinson, E. C. Harwood.

* Deceased.

Committee on Diseases.

Drs. Moreau Morris,
H. T. Hanks,
H. G. Piffard,
T. M. Coan,
Drs. A. B. Judson,
L. Weber,
E. Bradley,
S. A. Raborg.

Committee on Finance.

Drs. J. E. Janvrin,
Edwards Hall,
Drs. Wm. T. White,
C. E. Billington.

Delegates to State Medical Society.

Drs. Thomas S. Bahan,
Salvatore Caro,
Jean F. Chauveau,
George T. Elliot,*
Abraham Jacobi,
Robert Newman,
John C. Peters,
Stephen Rogers,
Andrew H. Smith,
William T. White,
James Ross,
Drs. Nathan Bozeman,
William M. Chamberlain,
James J. Connolly,
Thomas A. Emmet,
E. Lee Jones,
Ernst Krackowizer,
Alfred E. M. Purdy,
James Ross,
Robert J. O'Sullivan,
Bradford S. Thompson,
Gustavus S. Winston.

MEMBERS.

Drs. John G. Adams.....	12 Fifth avenue.
Cornelius R. Agnew.....	19 East 39th street.
James Anderson	30 University place.
Degli A. Antonini.....	416 West 33d street.
Lewis Applegate.....	304 West 28th street.
Thomas S. Bahan	467 Hudson street.
James L. Banks.....	57 Fifth avenue.
Fordyce Barker.....	85 Madison avenue.
John C. Barron.....	17 Washington place.
Robert A. Barry	233 East 13th street.
Wooster Beach.....	Coroner's office.
John C. Beales	10 West 19th street.
Geo. M. Beard.....	40 East 30th street.
Cornelius E. Billington....	157 Lexington avenue
John E. Blake	69 West 19th street.
William N. Blakeman	28 West 37th street.

* Deceased.

Drs.	Charles Bliss	361 West 42d street.
	Jeremiah P. Bliven.....	445 Grand street.
	Nathan Bozeman.....	53 West 33d street.
	Edward Bradley.....	1 West 24th street.
	A. Norton Brockway	217 East 127th street.
	Orville Brooks.....	161 East 50th street.
	Jas. L. Brown	44 East 19th street.
	Gurdon Buck.....	46 West 29th street.
	Chas. A. Budd.....	34 West 23d street.
	Henry D. Bulkley.....	42 East 22d street.
	Alexander Buchanan.....	355 West 30th street.
	Lucius D. Bulkley.....	42 East 22d street.
	Charles S. Bull.....	5 West 46th street.
	Freeman J. Bumstead.....	22 West 30th street.
	Frederick A. Burrall	28 West 11th street.
	John Busteed.....	50 East 27th street.
	George H. Butler	140 East 54th street.
	Frank A. Cady	15 East 16th street.
	Alonzo Calkins	42 Maiden lane.
	John L. Campbell.....	259 West 42d street.
	Iretas G. Cardner	242 East 61st street.
	William H. Carmalt.....	69 West 45th street.
	Salvatore Caro.....	411 West 34th street.
	David C. Carr	133 West 36th street.
	Alfred L. Carroll.....	45 William street.
	Frederick A. Castle	218 West 43 street.
	Alonzo J. Chadsey	288 Spring street.
	Thomas C. Chalmers.....	25 West 17th street.
	Wm. M. Chamberlain.....	102 West 34th street.
	Jean F. Chauveau.....	134 West Houston street.
	Peter F. Clark.....	314 West 33d street.
	Stephen J. Clark.....	148 West Houston street.
	David C. Carr	133 West 36th street.
	Alexander Clinton	358 West 20th street.
	Meredith Clymer.....	4 East 29th street.
	T. Munson Coan	325 West 27th street.
	Thomas F. Cock	13 West 36th street.
	John L. Colby	48 East 125th street.
	Palmer C. Cole	254 West 42d street.
	Ackerman J. Coles.....	25 West 32d street.
	James J. Connolly.....	143 West 11th street.

Drs.	Daniel J. C. Cook.....	311 East 4th street.
	A. Clarke Corson.....	365 Lexington avenue.
	John J. Crane	31 West 21st street.
	Joseph S. Crane.....	57 West 28th street.
	Alpheus B. Crosby	
	Edward Curtis	27 Washington place.
	Aaron P. Dalrymple.....	337 West 35th street.
	John C. Dalton	41 West 48th street.
	Benj. F. Dawson	8 East 15th street.
	Edward Delafield.....	1 East 17th street.
	Francis Delafield	12 West 31st street.
	Ellery Denison.....	403 Hudson street.
	Richard H. Derby.....	111 East 25th street.
	William Detmold	38 East 9th street.
	William J. Donor	47 West 27th street.
	John H. Dorn	138 Bleecker street.
	John H. Douglas.....	12 Clinton place.
	Henry S. Downs	123 Bleecker street.
	William H. Draper.....	37 East 12th street.
	Arthur Duberceau.....	50 West 12th street.
	Abram Dubois.....	12 West 30th street.
	Edward S. Dunster	Infants' Hospital.
	J. Ghislani Durant.....	31 West 32d street.
	William H. Dwinelle	43 East 10th street.
	John Dwyer.....	Emigrants' Hospital, W. I.
	William B. Eager	107 West 22d street.
	Ellsworth Elliot.....	48 West 36th street.
	Frederick Elliot.....	164 West 34th street.
	Samuel C. Ellis	257 Fourth avenue.
	Louis Elsberg.....	153 West 15th street.
	Thomas A. Emmet	89 Madison avenue.
	Horace P. Farnham	138 West 23d street.
	Joseph O. Farrington	137 East 127th street.
	Edward S. Finley	221 East 45th street.
	Thomas C. Finnell	132 West Houston street.
	W. R. Fisher	1303 Broadway.
	Austin Flint.....	50 East 34th street.
	Austin Flint, Jr.	125 East 36th street.
	Norton Folsom	26 West 29th street.
	James C. Forrester	202 Bleecker street.
	Joel Foster.....	265 Fourth avenue.

Drs.	S. Conant Foster	59 West 35th street.
	Edmund Fowler	120 West 45th street.
	John G. Frazer	321 West 35th street.
	N. Marsden Freeman	153 East 86th street.
	John P. Garrish	40 West 21st street.
	Harvey S. Gay	49 West 12th street.
	Anthony Gescheidt	44 Clinton place.
	Robert R. Gibbes	117 West 41st street.
	Henry W. Good	120 Greenwich street.
	Daniel H. Goodwillie	160 West 34th street.
	John W. S. Gouley	56 West 38th street.
	Mary E. Greene	336 West 30th street.
	Harvey H. Gregory	174 East 127th street.
	Thomas B. Griffin	115 East 12th street.
	John H. Griscom	42 East 29th street.
	Henry Griswold	356 West 30th street.
	Samuel L. Griswold	14 West 4th street.
	H. G. Gulake	104 West 34th street.
	Alexander N. Gunn	249 West 34th street.
	Charles F. Haase	14 3d street.
	Alexander Hadden	155 East 51st street.
	Edwards Hall	346 4th avenue.
	William H. Hall	129 East 54th street.
	Frank H. Hamilton	43 West 32d street.
	William A. Hammond	162 West 34th street.
	Henry E. Handerson	42d street and Lexington avenue.
	Horace T. Hanks	163 East 34th street.
	Daniel De W. Harrington	119 White street.
	Elisha Harris	208 West 42d street.
	H. Le Baron Hart	142 East 34th street.
	Edward C. Harwood	154 West 49th street.
	David A. Hedges	358 West 32d street.
	Aaron J. Henriquez	58 7th avenue.
	Morris H. Henry	157 West 34th street.
	Charles Henschel	35 West 33d street.
	Everitt Herrick	282 4th avenue.
	George Herriot	268 Spring street.
	Max Herzog	48 West 34th street.
	Joseph Hilton	39 Henry street.
	John H. Hinton	21 West 32d street.
	Abbott Hodgman	141 East 38th street.

Drs.	Michael Hogan	57 Bleecker street.
	Thomas H. Holgate	217 West 12th street.
	Lewis S. Horton	43 7th avenue.
	Benjamin Howard	160 West 34th street.
	Joseph W. Howe	36 West 24th street.
	Samuel T. Hubbard	27 West 9th street.
	Joseph J. Hull	158 West 34th street.
	Galen Hunter	104 Sixth avenue.
	James B. Hunter	134 West 34th street.
	William C. Hunter	255 Sixth avenue.
	Jarvis N. Husted	188 East Broadway.
	Nathaniel C. Husted	361 West 42d street.
	Frederick E. Hutchinson	238 East 13th street.
	George W. Ives	117 East 30th street.
	William H. Jackson	56 West 23d street.
	Abraham Jacobi	110 West 34th street.
	Edward H. Janes	208 West 42d street.
	Edward G. Janeway	249 West 23d street.
	Joseph E. Janvrin	Fifth Avenue Hotel.
	Woolsey Johnson	230 West 43d street.
	Alanson S. Jones	43 West 36th street.
	E. Lee Jones	12 West 35th street.
	Adoniram B. Judson	111 West 34th street.
	Joseph Kammerer	107 East 23d street.
	Burtis M. Keeney	162 West 12th street.
	John M. Kellogg	242 East 74th street.
	James Kennedy	42 Laight street.
	Jos. A. Kerrigan	166 West 12th street.
	Edward L. Keys	104 Madison avenue.
	J. Sage Kilbourne	126½ Franklin street.
	Isaac L. Kip	144 Broadway.
	James B. Kissam	145 West 48th street.
	Daniel H. Kitchen	353 West 30th street.
	Hermann Knapp	25 West 24th street.
	James Knight	42d street, cor. Lexington av.
	Ernst Krackowizer	16 West 12th street.
	Francis E. Langdon	144 West 45th street.
	Gustavus Langmann	418 West 43d street.
	Jonathan S. Lawrence	56 West 35th street.
	Frederick B. Lawson	31 West 31st street.
	Charles A. Leale	237 West 53d street.

Drs.	James R. Leaming.....	160 West 23d street.
	David A. Leavitt.....	52 East 54th street.
	Charles C. Lee.....	109 Madison avenue.
	Simeon N. Leo.....	320 West 23d street.
	John H. Leveridge.....	153 East Broadway.
	William B. Lewis.....	Dobbs' Ferry.
	Rufus P. Lincoln.....	22 West 31st street.
	Jared Linsley.....	22 Lafayette place.
	James L. Little.....	266 West 42d street.
	Watts C. Livingston.....	357 West 30th street.
	Arthur Lockrow.....	36 Great Jones street.
	Daniel C. Logue.....	303 Hudson street.
	Jonas P. Loines.....	121st street, cor. avenue A.
	Alfred L. Loomis.....	42 West 25th street.
	Edward G. Ludlow.....	
	Wm. T. Lusk.....	47 East 34th street.
	John Lynch.....	129 West Houston street.
	John McClelland.....	346 Fourth avenue.
	John R. McComb.....	485 West 22d street.
	Benj. W. McCready.....	43 East 23d street.
	Patrick W. McDonnell....	148 East 44th street.
	Wm. M. McLaury.....	244 West 42d street.
	Charles McMillan.....	4 East 34th street.
	Robert McNeilly.....	311 West 19th street.
	Calvin B. McQuesten.....	1213 East 55th street.
	Edward Macomb.....	156 East 15th street.
	David Magie.....	West 48th street.
	Thomas M. Markoe.....	20 West 30th street.
	William H. Maxwell.....	44 East 12th street.
	John Messenger.....	115 West 32d street.
	John T. Metcalf.....	18 West 30th street.
	Alphonse N. Moller.....	5 Van Nest place.
	Augustus A. Molony.....	262 West 42d street.
	Jesse L. Morrill.....	173 Lexington avenue.
	Moreau Morris.....	141 East 52d street.
	Jeremiah C. Morton.....	80 West Houston street.
	William B. Neftel.....	126 West 42d street.
	James B. Nelson.....	210 West 38th street.
	Robert Newman.....	145 West 47th street.
	Elias J. Nichols.....	91 Second avenue.
	Truman Nichols.....	267 East Broadway.

Drs.	Emil Noeggerath.....	33 Wesst 14th street.
	Patrick Nolan	257 West 26th street.
	Josiah C. Nott.....	50 West 22d street.
	Henry D. Noyes.....	73 Madison avenue.
	J. Fitzgerald O'Conor	224 East 32d street.
	William O'Donnell.....	46 Madison street.
	Joseph O'Dwyer.....	799 Lexington avenue.
	Thomas O'Farrel.....	167 West 21st street.
	Richard J. O'Sullivan.....	135 Avenue B.
	Fessenden N. Otis.....	108 West 34th street.
	Charles W. Packard	205 East 50th street.
	Horatio Paine	54th street, cor. Fifth ave.
	Martyn Paine.....	36 East 4th street.
	Willard Parker	41 East 12th street.
	Ralph L. Parsons.....	N. Y. City Lunatic Asylum.
	Edmund R. Peaselee.....	29 Madison avenue.
	Samuel R. Percy.....	47 West 38th street.
	John G. Perry	113 Madison avenue.
	Joseph S. Perry.....	296 Third street.
	George A. Peters	12 West 29th street.
	John C. Peters	83 Madison avenue.
	Eugene Peugnet	74 West 35th street.
	Henry G. Piffard.....	123 East 35th street.
	Howard Pinkney.....	24 East 41st street.
	Nelson Place, Jr.....	307 East Broadway.
	George B. Pomeroy.....	12 West 35th street.
	Oren D. Pomeroy	81 Macdougal street.
	James O. Pond	327 West 23d street.
	Alfred C. Post	291 Madison avenue.
	Christopher Prince	28 West 30th street.
	Alfred E. M. Purdy	123 East 38th street.
	Alfred S. Purdy.....	45 East 23d street.
	Samuel A. Purdy	35 West 48th street.
	Henry F. Quackenbos.....	15 East 18th street.
	Samuel A. Raborg.....	267 West 52d street.
	Benjamin I. Raphael	19 East 9th street.
	Edmund G. Rawson	4 Lexington avenue.
	James B. Reynolds	29 West 14th street.
	John H. Ripley	213 East 53d street.
	A. D. Rockwell	40 East 30th street.
	Stephen M. Roberts.....	232 East 34th street.

Drs.	William C. Roberts.....	105 West 21st street.
	John W. Robie	205 East 50th street.
	John Robinson.....	184 Grand street.
	George W. Robinson.....	184 Grand street.
	Benjamin R. Robson.....	106 West 4th street.
	Lewis A. Rodenstein.....	138th st., near Hudson river.
	Stephen Rogers	249 West 42d street.
	Stephen W. Roof.....	365 West 32d street.
	D. B. St. John Roosa	20 East 30th street.
	James Ross.....	66 Bank street.
	Antoine Ruppaner	Fifth Avenue Hotel.
	Charles P. Russell.....	Health Dept., 301 Mott st.
	Gustavus A. Sabine	46 West 23d street.
	Henry B. Sands.....	5 East 13th street.
	William W. Sanger.....	45 East 10th street.
	Louis F. Sass	61 West 36th street.
	Lewis A. Sayre	285 Fifth avenue.
	William Schirmer	112 East 58th street.
	Warren Schoonover	1046 Second avenue.
	Fred E. Schuedler.....	155 West 34th street.
	Henry T. Sears	257 West 52d street.
	Edward H. M. Sell	In Europe.
	Samuel Sexton.....	12 West 35th street.
	J. Marion Sims	267 Madison avenue.
	George F. Shrady	38 East 32d street.
	John Shrady.....	2031 Third avenue.
	Andrew H. Smith.....	408 Lexington avenue.
	David A. Smith.....	114 West 20th street.
	Governeur M. Smith.....	14 East 17th street.
	James O. Smith.....	81 Clinton place.
	Jerome C. Smith.....	139 East 39th street.
	Montross L. Smith.....	277 Henry street.
	Oscar G. Smith.....	270 West 11th street.
	S. Hanbury Smith.....	35 Union Square.
	Stephen Smith.....	29 West 42d street.
	Frederick G. Snelling.....	72 Madison avenue.
	Justus J. Spreng	172 West 32d street.
	James E. Steele.....	106 West 29th street.
	Alexander W. Stein.....	28 West 15th street.
	Alderich Steinach	135 Eldridge street.
	Marcus P. Stephenson	In Europe.

Drs.	John W. Sterling.....	Castle Garden.
	John E. Stillwell.....	238 East 12th street.
	Thomas B. Stirling.....	In Europe.
	John O. Stone	27 West 23d street.
	Ebenezer Storer.....	47 East 30th street.
	William W. Strew.....	582 Seventh avenue.
	James Sweeney	28 Mott street.
	Foster Swift	46 East 30th street.
	Rudolf Tauszky.....	325 West 50th street.
	Charles F. Taylor	1303 Broadway.
	Isaac E. Taylor.....	7 East 36th street.
	J. Theus Taylor.....	3 Washington place.
	Robert W. Taylor.....	50 Amity street.
	Sylvester Teats.....	35 West 35th street.
	Charles C. Terry	40 West 24th street.
	Julius S. Thebaud.....	9 East 13th street.
	T. Gaillard Thomas.....	86 5th avenue.
	Bradford S. Thompson	105 East 26th street.
	William F. Thoms.....	92 Madison street.
	William H. Thomson.....	111 West 43d street.
	Samuel P. Tuthill.....	239 East 53d street.
	Alfred Underhill.....	45 East 20th street.
	Peter Van Buren.....	214 West 22d street.
	William H. Van Buren....	104 Madison avenue.
	Reuben A. Vance	124 East 22d street.
	John L. Vandervoort	173 West 11th street.
	Matthew D. Van Doren...	274 5th avenue.
	John R. Van Kleeck.....	69 East 4th street.
	William H. Van Wyck ...	272 West 38th street.
	William E. Vermilye.....	427 4th avenue.
	Benjamin F. Vosburgh....	310 West 29th street.
	Charles S. Ward	61 Macdougal street.
	Edwin F. Ward	200 West 38th street.
	James E. Ward	18 East 33d street.
	Henry F. Walker	86 5th avenue.
	Everardus B. Warner.....	182 Bleecker street.
	John S. Warren.....	237 West 38th street.
	Leonard Weber	33 East 27th street.
	Faneuil D. Weisse.....	28 West 15th street.
	Ovid P. Wells	318 West 20th street.
	George G. Wheelock	159 West 34th street.

Drs.	John P. P. White	31 West 21st street.
	Octavius A. White	222 2d avenue.
	Oliver White	52 West 12th street.
	Whitman V. White	151 East 86th street.
	William T. White	130 East 30th street.
	John E. Whitehead	247 West 37th street.
	William R. Whitehead	101 West 48th street.
	Charles T. Whybrew	13 West 26th street.
	George Wilkes	16 Washington square, north.
	M. W. Williams	83 East 4th street.
	M. H. Williams	295 West 11th street.
	George Wilson	201 East 55th street.
	John Winslow	207 West 46th street.
	Gustavus S. Winston	18 West 31st street.
	Charles S. Wood	171 West 47th street.
	James R. Wood	80 Irving place.
	J. V. S. Wooley	153 East 78th street.
	Joseph Worster	115 East 30th street.
	J. Williston Wright	8 Charlton street.
	Gerardus H. Wynkoop	43 East 12th street.
	Leroy M. Yale	50 West 32d street.
	Frederick Zinsser	16 West 12th street.

NIAGARA COUNTY.

OFFICERS.

Drs. S. T. Clark, President.
Electus Cole, Vice-President
A. M. Leonard, Secretary.
W. B. Gould, Treasurer.

Delegates to State Medical Society.

Dr. S. T. Clark, Dr. Rexford Davison.

MEMBERS.

Drs.	William McCollum	Lockport.
	William B. Gould	do
	Alfred M. Leonard	do
	Charles N. Palmer	do
	Rexford Davison	do
	D. W. Harrington	do
	Hugh McG. Wilson	do

Drs. John Foote ..... Lockport.
Lafayette Balcom ..... do
A. W. Tryon..... do
J. H. Helmer..... do
J. B. Hartwell..... do
Martin S. Kittenger ... do
Joseph W. Grosvenor.. do
Simeon T. Clark ..... do
John L. Buchner..... do
J. E. Brennan ..... do
George Mann ..... Newfane.
Peter Failing..... Gassport.
Peter P. Murphy ..... Royalton.
Dan. H. Murphy..... do
A. G. Skinner ..... Youngstown.
H. S. McChesney ..... Porter.
H. B. Tabor..... Wilson.
J. Q. Huggins ..... Sanborn.
Wesley Earl..... Pekin.
Emmet F. Pyle ..... do
Electus Cole..... Middleport.
O. H. Sherman ..... Orleans county.
W. W. Van Buren .... Erie county.

ONEIDA COUNTY.

Officers.

Drs. William Russell, President.
Walter R. Griswold, Vice-President.
Edwin Hutchinson, Secretary.
William L. Baldwin, Treasurer.
Alonzo Churchill, Librarian.

Delegates to State Medical Society.

Drs. Joseph E. West, David Larrabee, H. G. Du Bois, Louis A. Tourtellot.

Delegates to American Medical Association.

Drs. D. G. Thomas, J. V. Cobb, Norton Wolcott, Jacob Hunt, W. H. Nelson, Luther Guiteau, Dr. H. N. Porter.

MEMBERS OF THE SOCIETY FROM JULY, 1806, TO JULY, 1871.

The names of those who have been presidents of both County and State Societies are printed in SMALL CAPITALS; those who have been presidents of the County Society, in *italics*. * Deceased. † Not connected with the Society.

NAMES OF MEMBERS.	Date of admission.	Residence.	Died.	Age.	Remarks.
* *Amos G. Hall*	July 1, 1806,				
* *Sewall Hopkins*	July 1, 1806,	Paris			
* David Hasbrouck	July 1, 1806,				
* *Seth Hastings, Jr.*	July 1, 1806,	Paris			
* Caleb Sampson	July 1, 1806,				
* *Francis Guiteau*	July 1, 1806,	Trenton			
* Mathew Brown, Jr.	July 1, 1806,	Rome			
* Welcome Sayles	July 1, 1806,	Vernon			
* *Elnathan Judd*	July 1, 1806,	Paris			
* Sherm'n Bartholomew,	July 1, 1806,	Paris			
* Marcus Hitchcock	July 1, 1806,	Utica			
* LAURENS HULL	July 1, 1806,	Bridgewater	June 27, 1865,	86	
* Isaac Weston	July 1, 1806,	Paris			
* Thomas Hartwell	July 1, 1806,	Rome			
* Zenas Hutchinson	July 1, 1806,	Western			
* Alexander Whaley	July 1, 1806,	Verona	May 18, 1871,	91	
* Morris Shannon	July 1, 1806,	Western			
* Paul Hutchinson, Jr.	July 1, 1806,	Western			
* Eliphaz Bissell	July 1, 1806,	Verona			
* Seth Capron	July 1, 1806,	Whitesboro			
* Daniel Avery	July 1, 1806,				
* John Fitch	July 1, 1806,	Paris			
* Enoch Alden	July 1, 1806,	Rome			
* Stephen Preston	July 1, 1806,	Sangerfield			
* *Arba Blair*	July 1, 1806,	Rome	1863	82	
* Thomas G. Hooker	July 1, 1806,	Augusta			
* Norton Porter	July 1, 1806,	Westmoreland,			
* Seth Hastings	July 1, 1806,	Deerfield			
* Samuel Frisbee	July 1, 1806,				
* Solomon Wolcott	Sept. 1, 1806,		1818		
† Nathaniel Rose	Sept. 1, 1806,	Augusta			
* Isaac Goodsell	Sept. 1, 1806,				Removed.
* Fenos Deming	Sept. 1, 1806,				Removed.
† Earl Bill	Sept. 1, 1806,	Remsen			
† Lucius Kellogg	Sept. 1, 1806,				
* Sylvester Nash	Sept. 1, 1806,	Augusta			
* Joel Rathburn	Sept. 1, 1806,	Western			
* Joshua Ransom	Sept. 1, 1806,	Camden			
† Andrew French	July 8, 1807,				
* *Luther Guiteau*	July 8, 1807,	Trenton	1859		
† Samuel Snow	July 8, 1807,	Leyden			
† Chester Gaylord	July 8, 1807,				Removed.
† Waitstill W. Wolcott,	July 8, 1807,	Utica			
† Spalding Pierce	July 8, 1807,				
* Christian Stockman	Jan. 12, 1808,	Utica			Removed.
† Amasa Trowbridge	July 5, 1808,				Removed to Jefferson Co
† Henry Smith	July 5, 1808,	Western			
† Isaac Cushman	July 6, 1813,				
† Ira Cross	July 6, 1813,				
† Lemuel L. Chester	July 6, 1813,	Westmoreland,			
† Erastus Cross	July 6, 1813,				
† Ezra Williams	July 6, 1813,				Moved to Dunkirk.
* Nathaniel Cheever	July 6, 1813,	Hampton	1824	50	
† Lewis Riggs	Sept. 14, 1813,				
† Campbell Waldo	Sept. 14, 1813,				
† John M. Watson	Jan. 6, 1814,				
* *Charles Babcock*	Jan. 6, 1814,	Whitestown	1850		
* Roswell P. Hayes	Jan. 6, 1814,				
* Wilbor Tillinghast	Jan. 6, 1814,				
* Josiah Noyes	Jan. 6, 1814,	Paris			
† Daniel Barker	July 5, 1814,				
† David M. Hale	July 5, 1814,				
* W. M. Coventry	Dec. 26, 1815,				Died in West Indies.
† Samuel Willard	July 1, 1817,				
† Leverett Bishop	July 1, 1817,	Paris			Homœopathist.
* *Thomas Goodsell, Jr.*	July 1, 1817,	Utica	1861	88	
* James L. Palmer	Jan. 6, 1818,	Sangerfield			
† Jotham Snow	July 7, 1818,	Remsen			
* Emory Bissell	July 7, 1818,	Paris			
† Moses Bristol	July 7, 1818,	Paris			
† Silas West	July 7, 1818,	Paris			Removed.
† Ariel Norton	July 7, 1818,	Vernon			
† George Brown	Jan. 5, 1819,	Rome			Withdrew June 1, 1828
† David M. Richards	July 6, 1819,				
* Seth S. Peck	July 4, 1820,	Whitestown			
† Luther Spalding	July 4, 1820,				

Members of the Society — (*Continued*).

SOCIETY REORGANIZED.

NAMES OF MEMBERS.	Date of admission.	Residence.	Died.	Age.	Remarks.
* Alex. Coventry	Jan. 1, 1822,	Utica	1831	66	
* *Theodore Pomeroy*	Jan. 1, 1822,	Utica			Withdrew July 10, 1855.
* John McCall	Jan. 1, 1822,	Utica	1867	80	Surgeon, U. S. A., 1812.
* Edmund Allen	Jan. 1, 1822,	Augusta			
Medina Preston	July 21, 1822,	Sangerfield			[pathist.
† Simon Z. Havens	July 21, 1822,	Sangerfield			Exp. July 19,'49, Homœo-
† *John F. Trowbridge*	July 21, 1822,	Bridgewater			In Syracuse
* Hezekiah Gates	July 21, 1822,	Whitestown			Removed.
* Uriel H. Kellogg	July 21, 1822,	Whitestown			
† Stephen Winchester	July 1, 1823,	Deerfield			
Almon Beardsley	July 1, 1823,	Oriskany			Lives in Utica.
† Abram Chase	July 1, 1823,				
† Abram Diefendorf	July 1, 1823,				
† Chester Gaylord	July 1, 1823,				
† Levi Buckingham	July 1, 1823,	Paris			Member Assembly.
† John L. Livermore	July 1, 1823,				
* Norton Porter	July 1, 1823,	Westmoreland			
† Curtis Havens	July 1, 1823,	Floyd			
† Samuel Beach	Jan. 6, 1824,	Annsville			
† Thomas S. Mills	Jan. 6, 1824,				
† James Douglas	July 6, 1824,	Utica			Removed to Quebec.
† Robert C. Wood	July 6, 1824,				Asst. Sur.-Gen., U. S. A.
† William Jones	July 6, 1824,				
† Samuel Tuttle	July 6, 1824,				Removed to Rochester.
* Horatio G. Torbett	Jan. 4, 1825,	Camden	1869		
* Levi Beardsley	Jan. 4, 1825,	Verona			
† Garrett P. Judd	July 5, 1825,	Paris			Removed to S. Islands.
Chas. B. Coventry	July 5, 1825,	Utica			
* Edward Aikin	July 5, 1825,	Utica			
Isaac Freeman	July 5, 1825,	Verona			
Herbert Hastings	July 5, 1825,	Utica			
† Samuel Hastings	July 5, 1825,	Utica			
* Newell Smith	July 5, 1825,	Whitestown			Expelled 1830.
* Welcome A. Clark	Jan. 3, 1826,	Whitestown			
† John A. Payne	July 4, 1826,	Paris			Homœopathist.
† John Stevens	July 4, 1826,	Vernon			
† Huchen Storrs	July 4, 1826,				
* Caleb Burge	July 4, 1826,	Utica			
* Benjamin P. Crossman	Jan. 2, 1827,	Deerfield			
Luther Guiteau, Jr.	Jan. 2, 1827,	Remsen			Trenton.
† G. E. Harrall	Jan. 2, 1827,	Utica			Removed to N. Y. city.
William P. Cleveland	July 3, 1827,	Waterville			
* Fredk. B. Henderson	Jan. 1, 1828,	Whitestown	1863		
* O. L. B. Main	Jan. 1, 1828,	Bridgewater			
† Lemuel Boomer	Jan. 1, 1828,	Floyd			
† A. McAllister	Jan. 1, 1828,	Utica			Expelled Oct. 2, 1832.
† Benj. Earl Bowen	July 1, 1828,				Removed to Oswego.
* Patrick McCraith	July 1, 1828,	Utica			
* P. B. Peckham	July 1, 1828,	Utica			Removed to Lockport.
† Covell Lee	July 1, 1828,				
† George H. Wright	July 1, 1828,	Rome			
† David Ely	July 1, 1828,	Camden			
† Ezra Watson	July 1, 1828,				
* John P. Bachelder	July 1, 1828,	Utica	1868		Removed to N. Y. city.
† Eli Botsford	July 1, 1828,	Augusta			
* Jeremiah Knight	July 1, 1828,	Paris	1856		
† Parker Sedgwick	July 1, 1828,	Vienna			
† Royal S. Sykes	Jan. 6, 1829,	Whitesboro			Withdrew Jan. 4, 1842.
* William Abell	Jan. 6, 1829,				
* J. N. Meacham	July 7, 1829,	Utica			
Alfred Gillett	July 7, 1829,	Steuben			
† John D. Bancroft	July 7, 1829,				[to Buffalo.
† Thomas M. Foote	July 7, 1829,	Clinton			Minister to N. G.; rem.
† Ralph Lord	July 7, 1829,				
* Nathaniel Sherritt	July 7, 1829,	Hampton			Withdrew July 7, 1835.
* Charles Porter	July 7, 1829,	Westmoreland			Died at Fulton.
* John Gridley	July 7, 1829,	Clinton			
† Elijah Ward	Jan. 5, 1830,				
† Nathan North	Jan. 5, 1830,				
† Marcus Hitchcock	Jan. 5, 1830,	Utica			Expelled July 7, 1835.
* Harold H. Pope	Jan. 5, 1830,	Rome	1868		
Isaac H. Douglas	July 6, 1830,	N. Hartford / Utica			
* William S. Lobdell	July 6, 1830,				
* William C. Warner	July 6, 1830,				
* John W. Fitch	July 6, 1830,	Kirkland			
† Warner Wadsworth	July 6, 1830,				Removed.
† John W. Hitchcock	July 6, 1830,				

MEMBERS OF THE SOCIETY — (*Continued.*)

SOCIETY REORGANIZED.

NAMES OF MEMBERS.	Date of admission.	Residence.	Died.	Age.	Remarks.
† Alvan W. Marsh	July 5, 1831,			..	
* Rufus Priest	July 5, 1831,	Sauquoit		..	Withdrew July 4, 1848.
† Lewis Yale	July 5, 1831,			..	
† Hetow F. Noyes	July 5, 1831,	Oriskany		..	
† Asahel Grant	Jan. 3, 1832,	Utica		..	Removed to Hartford, Ct.
† James S. Douglass	Jan. 3, 1832,	Vernon		..	Hom., re'd to Canada.
† L. Cooper Benjamin	Jan. 3, 1832,			..	
Daniel G. Thomas	Jan. 3, 1832,	Whitestown		..	Utica.
* Aaron B. Bligh	Jan. 3, 1832,	Paris	1856,	..	
* John Staats	Jan. 3, 1832,		1855,	..	Remov. to Geneva, N. Y.
* James M. Fuller	Jan. 3, 1832,			..	
† Edgar G. Mygatt	Jan. 3, 1832,			..	
* Edward C. Caldwell	Jan. 3, 1832,			..	
James S. Wheeler	Jan. 3, 1832,			..	[Mo.
† —— Van Zandt	July 3, 1832,			..	Removed to St. Louis,
† Edward Loomis	July 3, 1832,	Westmoreland,		..	
George W. Cleveland	July 3, 1832,	Waterville		..	
† George W. Gardner	Oct. 2, 1832,			..	Expelled Jan. 7, 1840.
† Reuben Luce	Jan. 1, 1833,			..	
† Ichabod Davis, Jr.	Jan. 1, 1833,			..	
† Walton H. Peckham	Jan. 1, 1833,			..	
† Albert W. Lothrop	Mar. 4, 1833.			..	
† S. W. Stewart	July 2, 1833,	Utica		..	Homœopathist.
† William W. Teft	July 2, 1833,			..	
† William Giles	July 2, 1833,			..	
† David W. Bradford	July 2, 1833,			..	
* Sidney H. Blossom	Jan. 7, 1834,	Vernon	1845,	35	
† L. F. Henry	Jan. 7, 1834,			..	
† Fitch Howes	July 1, 1834,	Vernon	1856,	..	
Josiah Rathbun	July 1, 1834,	Utica		..	
* Daniel Brainerd	July 1, 1834,			..	Removed to Chicago.
† Orville P. Laird	July 1, 1834,	Westmoreland,		..	
† E. A. Munger	July 1, 1834,	Waterville		..	Homœopathist.
David Lawbee	Jan. 6, 1835,	Paris		..	
* J. R. McKibbin	Jan. 6, 1835,			..	
* *Gustavus W. Pope*	Jan. 6, 1835,	Rome	1869,	..	
† Lyman Buckley	July 7, 1835.			..	[W. I.
† Justin B. Colwell	July 7, 1835.			..	Removed to St. Thomas,
* William Kirkwood	July 7, 1835.			..	Withdrew Jan. 7, 1840.
* *Charles Barrows*	July 7, 1835,	Kirkland		..	
† Giles P. Sheldon	July 7, 1835.			..	
* Rowland Sears	Jan. 5, 1836.			..	
* J. P. Newland	July 5, 1836,	Utica		..	
† Almond Pitcher	Jan. 3, 1837,			..	
* Barzillai Budlong	July 4, 1837.	Cassville	1868,	..	
J. V. Cobb	July 3. 1838.	Utica		..	In Rome.
† William H. P. Davis	July 3, 1838,			..	
† W. H. Wiser	Jan. 1, 1839.	New Hartford,		..	
† P. C. Knieskern	Jan. 1, 1839.			..	
† Brockholdst McVicker	July 2, 1839,	Boonville		..	Removed to Chicago, Ill.
* James S. May	Jan. 7, 1840,	New Hartford,		..	
William Morris	Jan. 5, 1841,	Utica		..	
† Erastus King	Jan. 5, 1841.	Bridgewater		..	
† William J. Olmstead	Jan. 5, 1841,			..	
† Edward Trask	July 6, 1841,	Oriskany Falls,		..	
* Jonathan Hurlburt	July 6, 1841.	Utica		..	
M. M. Bagg	Jan. 4, 1842.	Utica		..	
† J. T. Keller	Jan. 4, 1842.	Whitestown		..	At Chittenango.
† J. L. Kellogg	Jan. 4. 1842.			..	
† Hosea Hamilton	Jan. 4, 1842,			..	
† *P. M. Hastings*	July 5. 1842.			..	Removed to Hartford, Ct.
† Charles S. Johnson	July 5. 1842.			..	
† Dewitt C. Hamilton	July 5, 1842,	Oneida Castle,		..	
Welcome A. Babcock	Jan. 3, 1843,	Oriskany		..	
* Amariah Brigham	Jan. 3, 1843,	Utica	1849,	50	Supt. Lunatic Asylum.
† Theodore Dimon	July 1, 1844,	Utica		..	Removed to Auburn
† J. W. Harmon	July 1, 1845,			..	
F. M. Barrows	July 6, 1846,	Clinton		..	
† John H. Champion	July 6, 1847,			..	
* Nicoll H. Dering	July 6, 1847,	Utica	1867,	73	
Chas. E. Fraser		Delta		..	
Daniel Beach		Taberg		..	
DANIEL P. BISSELL	Jan. 9, 1849.	Utica		..	[to Florida.
* N. D. Benedict	Jan. 8, 1850.	Utica	1871,	..	Supt. S. L. Asy. removed
* Ulric Burke	Jan. 14, 1851.	Utica	1868,	69	
Samuel G. Wolcott	Jan. 14, 1851,	Utica		..	
* Bonaparte Philleo	Jan. 14, 1851,	Utica	1856,	..	

MEMBERS OF THE SOCIETY — (*Continued*).

SOCIETY REORGANIZED.

NAMES OF MEMBERS.	Date of admission.	Residence.	Died.	Age.	Remarks.
† Gustavus W. Pope, Jr.	Jan. 13, 1852,	Rome			
* A. D. Churchill	July 13, 1852,	Utica			Lost at sea.
† D. C. Dewey	Jan. 10, 1854,	N'wYork Mills			
* Fred. T. Henderson, Jr.	Jan. 4, 1855,	Whitestown	1870		
Henry N. Porter	Jan. 4, 1855,	N'wYork Mills			
J. M. Sturdevant	Jan. 4, 1855,	Rome			['61-'65.
Thomas M. Flandrau	Jan. 4, 1855,	Rome			Surg'n 117th N. Y. S. V.,
Jacob Hunt	Jan. 4, 1855,	Utica			
† — Thayer	Jan. 4, 1855,	Ara			
† A. S. Copeman	July 10, 1855,	Utica			Honorary.
Joseph E. West	July 10, 1855,	Utica			Surgeon 28th N. Y. S. V.
William Russell	Jan. 8, 1856,	Utica			
Thomas Spear	Jan. 8, 1856,	Utica			
† A. Cornish	Jan. 8, 1856,	Brownville			
* Henry Brown	Jan. 8, 1856,	Rome			
JOHN P. GRAY	Jan. 8, 1856,	Utica			Supt. State Lun. Asylum.
* W. H. Gardner	Jan. 8, 1856,	Whitestown			
Robert Frazier	Jan. 13, 1857,	McConnelsv'le			In Camden.
† A. Brown	July 14. 1857.	Utica			
† C. K. S. Millard	July 14, 1857,	Clayville			Homœopathist.
J. F. Huntley	Jan. 12, 1858,	Durhamville			
* Walter B. Coventry	July 13, 1858,	Utica	1866	33	Surgeon 26th N. Y. S. V.
James E. Jones	July 13, 1858,	Utica			
* S. B. Valentine	July 13, 1858.	Utica			
Delos A. Crane	July 13, 1858,	Holland Patent			
Walter R. Griswold	July 13, 1858,	New Hartford.			
† Thomas L. Virgil	Jan. 11, 1859,	Rome			
E. J. Lawton	Jan. 11, 1859,	Rome			
† H. W. Carpenter	Jan. 11, 1859,	Holland Patent			Removed to Oneida.
† *Charles L. Hogeboom*	July 12, 1859,	Utica			In New York city.
† Thos. W. Wall	July 12, 1859,	Floyd			
Ira D. Hopkins	July 12, 1859,	Utica			
David Terry	July 12, 1859,	Remsen			
† Edgar C. Bass	July 12, 1859,	N'wYork Mills			
Charles E. Smith	Jan. 10, 1860,	Whitestown			
* Thomas Pell	Jan. 10, 1860,	Deerfield	1869		
† A. Putnam	July 10, 1860,	Rome			
* H. B. Day	July 10, 1860,	Utica	Aug. 23, 1870,		
Abram G. Brower	Jan. 14, 1862,	Utica			
† H. Lloyd Williams	Jan. 14, 1862,	Utica			
M. Calvin West	July 8, 1862,	Rome			
Austin A. Barrows	Jan. 13, 1863,	Clinton			
Alonzo Churchill	July 14, 1863,	Utica			Surgeon 14th N. Y. Vols.
Louis A. Tourtellot	July 14, 1863,	Utica			
Walter Booth	July 14, 1863,	Boonville			
† Chas. H. Pegg	Jan. 12, 1864,				
† Isaac J. Hunt	Jan. 12, 1864,	Utica			Expelled 1870.
* Albert Bickford	July 12, 1864,	Camden			
† O. M. Randall	July 12, 1864.	Oneida			
Christopher C. Reed	July 11, 1865,	Western			In Rome. [Minn.
* Samuel E. Shautz	July 11, 1865,	Utica			Supt. State Lun. Asylum,
Evan G. Williams	July 11, 1865,	Remsen			
Mendina Preston, Jr.	July 11, 1865,	Sangerfield			
† Francis Jones, Jr.	July 11, 1865,	Floyd			
† Chas. W. Hamlin	July 10, 1866,	Oriskany Falls			In Herkimer county.
Henry W. Caldwell	July 10, 1866.	Florence			
Robert S. Dryer	July 10, 1866,	Utica			Asst. Surg. N. Y. S. V.
† Hugh Sloan	July 10, 1866.	Wash'ton Mills			
† John Russell	July 10, 1866,	New Hartford.			Removed to Montana.
Edwin Hutchinson	July 10, 1866,	Utica			Surgeon 137th N. Y. S. V.
† Frank L. Stone	July 10, 1866,	Oriskany			
E. G. Howland	July 10, 1866,	Knoxboro			[Asylum.
† J. M. Cleveland	July 10, 1866.	Utica			Supt. Hudson R. Lunatic
Abner O. Kellogg	July 10, 1866,	Utica			Asst. Phy. St. L. Asylum.
J. W. Cooper	July 10, 1866,	North Bay			
C. N. Palmer	July 10, 1866,	Sauquoit			
† J. C. Darling	July 10, 1866,	New Hartford.			
Norton Wolcott	July 10, 1866,	Holland Patent			
† R. E. Sutton	July 10, 1866,	Rome			
Mathias Cook	Jan. 8, 1867,	Utica			Asst. Surg. Ohio Vols.
Hiram G. DuBois	Jan 8, 1867,	Camden			
Benj. Frank Pope	Jan. 8, 1867.	Rome			Asst. Surg. U. S. A.
Joshua M. Fiske	July 9, 1867.	Utica			
† John A. Jenkins	July 9, 1867.	Utica			
Thomas J. Bergen	Jan. 14, 1868,	Utica			Asst. Surg. 1st Pa. Vols.
† A. C. Mackenzie	July 14, 1868,	Utica			
William L. Baldwin	July 14, 1868,	Utica			
Wales Buel	Jan. 12, 1869,	Utica			

MEMBERS OF THE SOCIETY—(*Continued*).

SOCIETY REORGANIZED.

NAMES OF MEMBERS.	Date of admission.	Residence.	Died.	Age.	Remarks.
Judson B. Andrews	Apr. 13, 1869,	Utica			Assistant physicians N. Y. S. L. Asylum
Walter Kempster	Apr. 13, 1869,	Utica			
W. H. Nelson	Apr. 13, 1869,	Taberg			
Henry C. Palmer	July 13, 1869,	Hampton			
Ebenezer H. Thurston	July 13, 1869,	Utica			
D. Albert Barnum	July 13, 1869,	Cassville			
Timothy E. Wilcox	July 13, 1869,	Cassville			
Henry G. Reid	Jan. 11, 1870,	N. Western			
Charles H. Bailey	Apr. 12, 1870,	Rome			
Charles B. Tefft	July 12, 1870,	Waterville			
G. Leroy Menzie	Jan. 10, 1871,	Verona			
Edward Brayton	Jan. 10, 1871,	Whitesboro			
G. H. Wheelock	Apr. 11, 1871,	Taberg			
J. K. Chamberlayne	Apr. 11, 1871,	Utica			
W. M. James	Apr. 11, 1871,	Whitesboro			

ONONDAGA COUNTY.

[Annual meeting second Tuesday in January. Semi-annual meeting last Tuesday in January. Two quarterly meetings at such intermediate times as the society directs. All meetings are held in Syracuse.]

OFFICERS.

Drs. M. D. Benedict, President.
Jas. M. Morris, Vice-President.
Wm. T. Plant, Secretary.
Alfred Mercer, Treasurer.
J. W. Lawton, Librarian.

Censors.

Drs. R. W. Pease, George W. Earll, Edwin A. Knapp, Israel Parsons, Dr. H. D. Didama.

Delegates to State Medical Society.

Dr. James T. Wells, Dr. Roger W. Pease. Dr. F. M. Byington.

MEMBERS.

Drs. Henry B. Allen ..... Baldwinsville.
Isaac Baker..... Syracuse.
George B. Barrus ..... Navarino.
M. D. Benedict ..... Syracuse.
William A. Bennett ..... 13 Bastable block, ... Syracuse.
M. H. Blynn ..... Cicero.
J. Otis Burt..... Cor. Adams and Irving, Syracuse.
F. M. Byington ..... Fayetteville.

Drs. George T. Campbell ..... Skaneateles.
Judson Candee ..... Pompey Center.
James E. Carr ..... Jordan.
George W. Cook ..... 90 Montgomery, ... Syracuse.
Henry Crouse ..... Montgomery, cor. Fayette, do
E. V. Cuykendall ..... Lafayette.
A. J. Dallas ..... 3 Pike block, ... Syracuse.
H. D. Didama ..... North Salina, ... do
James Dorward ..... Otisco.
Gregory Doyle ..... West Fayette, ... Syracuse.
George W. Draper ..... Geddes.
J. P. Dunlap ..... 108 East Genesee, ... Syracuse.
George W. Earll ..... Skaneateles.
Merritt B. Fairchild ..... 347 North Salina, ... Syracuse.
James Foran ..... 27 North Salina..... do
Stephen B. Gay ..... 86 South Salina,..... do
J. H. Graves ..... Manlius Station.
Seabury M. Higgins ..... Memphis.
James F. Johnson ..... Euclid.
James V. Kendall ..... Baldwinsville.
James P. Kimball ..... Pompey.
Samuel Kingsley ..... South Onondaga.
Edwin A. Knapp ..... Jamesville.
Jonathan Kneeland ..... South Onondaga.
John W. Lawton ..... 2 Convention block, ... Syracuse.
George S. Loomis ..... Dewitt.
W. O. Luce ..... Elbridge.
M. M. McDonald ..... Salina, ... Syracuse.
Lisbi Martin ..... Lysander.
Alfred Mercer ..... 40 Montgomery,..... Syracuse.
James A. Mowris ..... Savings Bank building,. do
Horace Nims ..... Manlius.
Elijah Park ..... Lafayette.
Israel Parsons ..... Marcellus.
R. W. Pease ..... Montgomery, ... Syracuse.
William T. Plant ..... 18 Harrison, ... do
W. W. Porter ..... Geddes.
J. D. Potter ..... Delphi.
N. C. Powers ..... 96 Warren, ... Syracuse.
Ashbel Searl ..... Onondaga Valley.
Ichabod H. Searl ..... 38 East Onondaga,..... Syracuse.

Drs. J. P. Shumway	Baldwinsville.	
Lewis C. Skinner	Belle Isle.	
John O. Slocum	Camillus.	
William Manlius Smith	Manlius.	
A. V. R. Snyder	Euclid.	
Jehiel Stearns	Pompey.	
C. S. Sterling	Liverpool.	
F. A. Strong	Brewerton.	
Harvey P. Talman	Onondaga Valley.	
Lake I. Tefft	West Genesee,	Syracuse.
Nathan R. Tefft	Onondaga.	
Van Dyke Tripp	Borodino.	
John F. Trowbridge	69½ East Fayette,	Syracuse.
E. E. Van De Warker	5 West Fayette,	do
John Van Duyn	147 Gifford,	do
O. E. Wainwright	Syracuse.	
J. C. B. Wallace	Baldwinsville.	
James F. Wells	do	
Amos Westcott	112 South Salina,	Syracuse.
James Whitford	Onondaga Valley.	
Hiram Wiggins	Elbridge.	
H. B. Wilbur	State Idiot Asylum,	Syracuse.

ONTARIO COUNTY.

[Quarterly meetings held second Tuesday in January, April, July and October.]

OFFICERS.

Drs. James H. Allen, President.
C. H. Wood, Vice-President.
J. B. Hayes, Secretary and Treasurer.

Censors.

Drs. E. W. Simmons, J. T. Smith, Dr. F. D. Vanderhoof, Drs. F. L. Wilbur, J. W. Palmer,

Trustees of Library.

Drs. W. T. Swart, J. B. Hayes, Dr. H. F. Bennett, Drs. H. Jewett, J. T. Smith,

Delegates to State Medical Society.

Dr. E. W. Simmons. Dr. C. C. Murphy.

Members.

Drs.	D. S. Allen	Gorham.
	J. H. Allen	do
	W. W. Archer	Clifton Springs.
	J. P. Avery	Geneva.
	H. F. Bennett	Canandaigua.
	F. R. Bentley	Cheshire.
	H. W. Brown	Seneca Castle.
	C. X. Carpenter	Geneva.
	E. G. Carpenter	Phelps.
	M. R. Carson	Canandaigua.
	W. A. Carson	Rushville.
	J. B. Chapin	Canandaigua.
	H. K. Clarke	Geneva.
	George Cook	Canandaigua.
	A. G. Crittenden	Clifton Springs.
	D. D. Dayton	Geneva.
	G. N. Dox	do
	D. Durgan	Bristol.
	C. C. Eastman	Geneva.
	H. N. Eastman	do
	H. C. Gorham	Canandaigua.
	J. B. Hayes	do
	William S. Hicks	Bristol.
	J. Q. Howe	Phelps.
	H. Jewett	Canandaigua.
	L. B. Lester	Gorham.
	N. L. Lusk	Naples.
	D. J. Mallery	Bristol.
	C. C. Murphy	East Bloomfield.
	H. W. Nichols	Rushville.
	J. W. Palmer	Victor.
	James Parmele, Jr.	Naples.
	L. N. Phinney	Gorham.
	M. H. Picot	Geneva.
	J. R. Pratt	Manchester.
	F. B. Seelye	Rushville.
	E. W. Simmons	Canandaigua.
	M. D. Skinner	Reed's Corners.
	J. T. Smith	Canandaigua.
	J. Stafford	Manchester.

Drs. W. T. Swart..... Canandaigua.
F. D. Vanderhoof..... Phelps.
P. P. Van Vleet..... Shortsville.
D. G. Weare..... Clifton Springs.
D. T. Webster..... East Bloomfield.
S. W. West..... Allen's Hill.
L. F. Wilbur..... Honeoye.
C. H. Wood..... West Bloomfield.

ORANGE COUNTY.

[Meetings, June and November.]

Officers.

Drs. Joseph Moffatt, President.
R. V. K. Montfort, Vice-President.
G. E. Putney, Secretary.
D. C. Winfield, Treasurer and Librarian.

Censors.

Drs. C. P. Smith, R. Sloan, H. C. Seely, A. Goodman, Dr. George Sears.

Delegate to State Medical Society.

Dr. R. V. K. Montfort.

Delegate to American Medical Association.

Dr. William P. Townsend.

Members.

Drs. A. Barclay..... Newburgh.
W. F. C. Beattie..... Cornwall.
J. C. Boyd..... Monroe.
N. Roe Bradner..... Warwick.
W. B. Bradner..... do
S. G. Carpenter..... Chester.
J. C. Coleman..... Goshen.
Avery Cook..... Otisville.
S. M. Crawford..... Montgomery.
N. Deyo..... 116 First, Newburgh.
George Eager, Jr..... Montgomery.
Smith Ely..... Cor. First and Grand, Newburgh.

Drs. S. W. Esray..... Monroe.
Harvey Everett..... Middletown.
L. P. Farries ..... Sugar Loaf.
Robert Farries..... Otisville.
A. Goodman..... Salisbury Mills.
Charles Hardenburgh ..... Port Jervis.
Henry Hardenburgh..... do
M. H. Hayne..... Minisink.
I. S. Hunt..... Port Jervis.
I. D. Johnston..... Middletown.
B. Millspaugh..... Montgomery.
G. M. Millspaugh ..... Walden.
Thomas Millspaugh..... do
Philander Mix..... Washingtonville.
Joseph Moffatt..... Blooming Grove.
R. V. K. Montfort..... 115 Lander, Newburgh.
G. E. Putney ..... Howells.
H. C. Seely..... Amity.
Robert Sloan ..... Middletown.
J. H. Smiley ..... Scotchtown.
Charles P. Smith..... Chester.
Samuel C. Smith ..... Montgomery.
W. C. Terry..... Ridgebury.
W. P. Townsend..... Goshen.
Solomon Van Etten..... Port Jervis.
T. Walsh..... do
J. L. Whitaker..... Unionville.
D. C. Winfield..... Middletown.
W. H. Woodruff..... Pine Bush.
Bartow Wright ..... Hamptonburgh.
Theodore Writer..... Otisville.

ORLEANS COUNTY.

No county society.

OSWEGO COUNTY.

[Annual meeting, second Tuesday in June, at Mexico. Semi-annual meeting, second Tuesday in December, at Oswego.]

OFFICERS.

Drs. William H. Rice, President.
Edward M. Curtis, Vice-President.
C. Macfarlane, Recording Secretary.
George P. Johnson, Corresponding Secretary.
D. D. Drake, Librarian.
C. G. Bacon, Treasurer.

Censors.

Drs. L. C. Mitchell, M. Bradbury, Drs. Lucius Stevens, J. L. Jones.

Delegates to State Medical Society.

Dr. Lucius Stevens, Dr. F. S. Low, Dr. C. C. P. Clark.

Delegates to American Medical Association.

Dr. C. M. Lee, Dr. E. M. Curtis, Dr. C. C. P. Clark.

MEMBERS.

Drs. Dillon Acker	Hannibal.
William J. Acker	do
S. D. Andrews	Oswego Falls.
C. G. Bacon	Fulton.
R. C. Baldwin	Volney.
N. W. Bates	Central Square.
M. Bradbury	Mexico.
J. Lyman Bulkley	Sandy Creek.
C. C. P. Clark	Oswego.
A. S. Coe	do
William B. Coy	Schroeppel
S. J. Crockett	Oswego.
Ed. M. Curtis	do
Gibson A. Dayton	Mexico.
A. Desaulnier	Oswego.
Byron Dewitt	do
D. D. Drake	Central Square.

Drs. Joseph Gardiner	Williamstown.
T. J. Green	Parish.
L. O. Huntington	Palermo.
George P. Johnson	Mexico.
S. P. Johnson	Oswego.
Ira L. Jones	Minetto.
S. P. Kingston	Oswego.
D. A. Lawton	Pulaski.
Charles M. Lee	Fulton.
A. C. Livingston	do
F. S. Low	Pulaski.
C. Macfarlane	Oswego.
L. C. Mitchell	Sand Banks.
J. B. Murdoch	Oswego.
D. Pardee	Fulton.
Stephen Pardee	do
Joseph Pero	West Amboy.
S. G. Place	Southwest Oswego.
Alfred Rice	Hannibal.
William H. Rice	Phœnix.
George W. Snyder	Scriba.
Lucius Stevens	Constantia.
A. Van Dyck	Oswego.
A. White	Parish.
George G. Whittaker	New Haven.
D. T. Whyborn	Cleveland.

OTSEGO COUNTY.

[Meetings third Tuesday in January and July, at Cooperstown.]

OFFICERS.

Drs. Lyman H. Hills, President.
D. N. Walker, Vice-President.
Horace Lathrop, Secretary.
Thomas B. Smith, Treasurer.

Censors.

Drs. O. D. Ball, E. D. Hills, C. W. Frisbie, H. W. Boorn.

Delegates to State Medical Society.

Dr. Horace Lathrop, Dr. George W. Cook.

Delegates to the American Medical Association.

Dr. George W. Cook, Dr. H. T. Harris.

MEMBERS.

Drs.	O. D. Ball	Schenevus.
	Wilson D. Bassett	Cooperstown.
	Nelson Beach	Middlefield Center.
	Henry W. Boorn	Colliersville.
	Isaac Burnett	Milford.
	C. Meigs Case	Oneonta.
	Samuel H. Case	do
	J. D. Clyde	Cherry Valley.
	George W. Cook	Otego.
	W. B. Craine	Richfield Spa.
	John Drake	Westford.
	C. W. Frisbie	East Springfield.
	G. L. Halsey	Unadilla.
	H. T. Harris	Laurens.
	E. D. Hills	Burlington Flats.
	Lyman H. Hills	Schuyler's Lake.
	Erastus King	Unadilla Forks.
	Horace Lathrop	Cooperstown.
	J. K. Leaning	Fly Creek.
	William Leonard	Worcester.
	E. B. McClintock	Morris.
	J. F. Mather	Garrattsville.
	George Merritt	Cherry Valley.
	Evander Odell	Unadilla.
	D. W. Patrick	Schuyler's Lake.
	S. L. Robinson	Hartwick.
	E. F. Saunders	Otego.
	A. S. Seeber	Milford.
	John Sharpe	Cherry Valley.
	N. Smith	Middlefield.
	P. S. Smith	Hartwick.
	T. B. Smith	Cooperstown.
	Horace Snyder	Monticello.
	E. W. Spaford	Portlandville.
	C. D. Spencer	Butternuts.
	William M. Spencer	Edmeston.
	John W. Sterricker	Roseboom.

Drs. William Stewart ..... East Worcester.
Addison P. Strong ..... Laurens.
Joshua J. Sweet..... Unadilla.
Alfred Van Horne..... Center Springfield.
D. N. Walker ..... Roseboom.
E. M. West ..... Mount Vision.

PUTNAM COUNTY.

No county society.

QUEENS COUNTY.

[Annual meeting and election of officers, last Tuesday in May. Semi-annual meeting, last Tuesday in November.]

Officers.

Drs. F. B. Field, President.
Peter Y. Frye, Vice-President.
W. D. Wood, Secretary and Treasurer.

Censors.

Drs. W. Lindsay, Drs. S. Hendrickson,
H. H. Davidson, R. S. Seaman,
Dr. J. Banks.

Delegates to American Medical Association.

Dr. J. C. Townsend, Dr. W. Lindsay.

Delegates to State Medical Society.

Dr. W. D. Wood, Dr. S. B. Smallwood.

Members.

Drs. George Altmuller..... Glen Cove.
John Andrews..... East New York.
Julius Auerbach..... Rockville Center.
R. B. Baiseley ..... Rockville Center.
J. Banks ..... Huttington.
C. H. Barker ..... Jamaica.
C. Blaisdell..... Jericho.
W. D. Creed..... Queens.
H. H. Davidson..... Vernon Valley.
John Davidson..... Hempstead.
Furman B. Field..... Roslyn.
Peter Y. Frye ..... Oyster Bay.

Drs. Skidmore Hendrickson.... Jamaica.
G. C. Kissam..... do
Walter Lindsay ..... Huntington.
J. Morrell..... Glen Cove.
John Ordronaux..... Roslyn.
R. S. Seaman..... Glen Cove.
S. B. Smallwood ..... Huntington.
E. Webb..... Hempstead.
W. W. Strew..... New York.
Dewitt Tappan ..... Glen Cove.
James C. Townsend ..... do
J. D. Trask ..... Astoria.
Samuel Treadwell ..... Hempstead.
H. B. Vandeventer..... Roslyn.
W. C. Van Zant..... Oyster Bay.
Maus. R. Vedder..... Flushing.
E. Webb..... Hempstead.
D. B. Whitney..... East Norwich.
William D. Wood..... Jamaica.
W. B. Woodend ..... Huntington
George P. Wright..... Newtown.

RENSSELAER COUNTY.

[Annual meeting second Tuesday in January. Stated meetings second Tuesday in each month.]

OFFICERS.

Drs. John Squires, President.
David W. Hiscox, Vice-President.
Le Roy McLean, Treasurer.
T. Brinsmade Heimstreet, Secretary.
Joseph D. Lomax, Librarian.

Censors.

Drs. R. H. Ward, Drs. W. L. Cooper.
J. M. Shaffer C. H. Burbeck.
Dr. C. A. Winship.

Delegates to State Medical Society.

Dr. D. D. Bucklin Dr. M. H. Burton,
Dr. C. L. Hubbell.

Delegate to the American Medical Association.

Dr. W. S. Cooper.

Committee on Ethics (by appointment of the President).

Dr. C. L. Hubbell, Dr. C. H. Burbeck,
Dr. J. M. Shaffer.

MEMBERS.

Drs. H. G. Adams	18 King street	Troy.
W. Akin	12 Fourth street	do
Amos Allen	Grafton Center.	
C. S. Allen	Greenbush.	
E. N. Beale	Schaghticoke.	
Wm. N. Bonesteel	Nail Factory	Troy.
R. B. Bontecou	82 Fourth street	do
Charles A. Brownell	13 Liberty street	do
Moses Brownell	do	do
D. D. Bucklin	230 State street	Lansingburgh.
Chas. H. Burbeck	Brunswick Centre.	
M. H. Burton	75 Fourth street	Troy.
Elihu Butts	Schaghticoke.	
N. Hermon Camp	111 Fourth street	Troy.
Eber W. Carmichael	Sand Lake.	
Wm. L. Cooper	Rensselaer street	Albia.
Wm. S. Cooper	81 Third street	Troy.
Richard S. Connelly	Johnsonville.	
Mahlon S. Felter	106 Fifth street	Troy.
Charles Freiot	14 Fourth street	do
H. Gnadendorff	12 Second street	do
T. B. Heimstreet	43 Third street	do
D. W. Hiscox	Pittstown.	
Geo. H. Hubbard	220 State street	Lansingburgh.
Chas. L. Hubbell	35 First street	Troy.
A. D. Hull	288 State street	Lansingburgh.
W. H. Hull	Poestenkill.	
Jas. C. Hutchison	4 Ida place	Troy.
Jas. L. Hogeboom	Castleton.	
Wm. Johnson	Valley Falls.	
J. G. Laviolette	85 Third street	Troy.
Joseph D. Lomax	Marshall Infirmary	do
John T. Luck	5 Mansion House block	do
Jas. McChesney	Pawling avenue	do
Le Roy McLean	21 First street	do
Salmon Moses	Hoosick Falls.	

Drs.	Albert S. Newcomb	17 First street	Troy.
	Francis B. Parmele	Greenbush.	
	Wm. P. Seymour	105 Third street	Troy.
	Jas. M. Shaffer	South Schodack.	
	John Squires	Schodack Landing.	
	Antony Ten Eyck	De Freestville.	
	James Thorn	133 Second street	Troy.
	Harry Van Wert	Pittstown Corners.	
	R. Halstead Ward	53 Fourth street	Troy.
	John Warren	Hoosick Corners.	
	P. S. Westervelt	Cropseyville.	
	Louis C. Wheeler	13 Second street	Troy.
	Henry B. Whiton	106 Second street	do
	C. A. Winship	Eagle Mills.	
	Alfred Wotkyns	75 Third street	Troy.
	Edward Yates	North Greenbush.	
	Horace H. Young	Rand's Hall	Troy.

RICHMOND COUNTY.

[Meetings first Tuesday in each month at the Seamen's Retreat.]

Officers.

Drs. D. A. Edgar, President.
I. Lea, Vice-President.
C. H. King, Treasurer.
J. J. Van Rensselaer, Secretary.

Censors.

Dr. W. C. Anderson, Dr. G. C. Hubbard,
Dr. I. Millspaugh.

Members.

Drs.	Wm. C. Anderson	Stapleton.
	Solomon Andrews	Tottenville.
	Ed. F. Arnoux	West New Brighton.
	Charles Wm. Boetzel	Clifton.
	James G. Clark	West New Brighton.
	D. A. Edgar	Marshland.
	Jno. L. Feeney	Stapleton.
	R. H. Golder	Rossville.
	George C. Hubbard	Tottenville.

Drs.	C. H. King	Stapleton.
	Isaac Lea	do
	Ed. C. Mundy	Port Richmond.
	Isaac L. Millspaugh	Richmond.
	Frank E. Martindale	Port Richmond.
	George N. Richardson	Stapleton.
	Oscar T. Sherman	Clifton.
	Alvin Satterthwait	Mariners' Harbor.
	J. J. Van Rensselaer	New Brighton.
	Theo. Walzer	do

ROCKLAND COUNTY.

[Annual meeting, first Tuesday in May. Semi-annual meeting, first Tuesday in October.]

OFFICERS.

Drs. J. S. Wigton, President.
J. C. Harring, Vice-President.
William Govan, Secretary.
T. B. Smith, Treasurer.

Delegate to State Medical Society.

Dr. T. B. Smith.

Delegate to American Medical Association.

Dr. William Govan.

MEMBERS.

Drs.	R. D. Bogert	Nanuet.
	B. Davidson	Nyack.
	John Demarest	Spring Valley.
	William Govan	Stoney Point.
	J. C. Harring	Nyack Turnpike.
	J. Henggler	Clarksville.
	James Hopson	Piermont.
	Henry H. House	Haverstraw.
	William S. House	do
	C. L. Humphreys	Spring Valley.
	Daniel Lake	do
	C. H. Masten	Tappan.
	George Mursick	Nyack.
	J. O. Polhamus	do
	J. W. Riggs	Spring Valley.

Drs. S. S. Sloat..... Haverstraw.
T. B. Smith..... Nyack.
James S. Stephens..... Tappan.
W. G. Stevenson..... Nyack.
J. H. Sullivan..... Haverstraw.
G. O. Swift..... Nyack.
J. S. Wigton..... Spring Valley.

ST. LAWRENCE COUNTY.

ORGANIZED 1830.

[Annual meeting, second Tuesday in January. Semi-annual meeting, second Tuesday in June Place of meeting determined by vote at each annual meeting.]

OFFICERS.

Drs. Robert Morris, President.
J. H. Grinnell, Vice-President.
A. P. Grinnell, Secretary.
L. Sanborn, Treasurer.

Censors.

Dr. A. P. Grinnell, Dr. E. H. Bridges,
Dr. Caleb Pierce.

Delegates to State Medical Society.

Dr. B. F. Sherman, Dr. L. Sanborn
Dr. E. H. Bridges.

MEMBERS.

Drs. Alvin Ames..... Canton.
B. M. Ames..... Colton.
C. B. Barber..... Bloomingdale.
C. C. Bartholomew..... 235 Ford, Ogdensburg.
C. C. Bates..... Elm, Potsdam.
J. H. Benton..... 120 State, Ogdensburg.
H. A. Boland..... Waddington.
E. H. Bridges..... 159 Ford, Ogdensburg.
Z. B. Bridges..... 159 Ford, Ogdensburg.
D. Clark..... Canton.
G. F. Cole..... Potsdam.
J. S. Conkey..... Canton.
W. H. Cruickshank..... Lisbon.

Drs. F. A. Cutter ..... Hopkinton.
Isaac Drake ..... Stockholm.
Benjamin F. Drury..... Edwards.
Thomas Dunton..... Stockholm.
S. Ford ..... Norfolk.
J. R. Furniss..... 110 Ford, Ogdensburg.
J. H. Gibbons ..... Russell.
A. R. Gregor..... Hammond.
J. H. Grinnell ..... Massena.
A. P. Grinnell..... 76 Ford, Ogdensburg
E. A. Hutchins ..... North Lawrence.
J. H. Jackson..... Laurenceville.
D. McFalls..... Rossie.
Robert Morris ..... Ford corner Franklin, Ogdensburg.
Thomas Murdock ..... Rensselaer Falls.
M. S. Parker ..... Parishville.
S. L. Parmelee..... Gouverneur.
T. A. Pease ..... North Potsdam.
Caleb Pierce..... Madrid.
John Pierce ..... do
J. C. Preston ..... Canton.
G. W. Reynolds ..... Morley.
Jesse Reynolds..... Potsdam.
L. Sanborn..... Heuvelton.
E. G. Seymour..... Hermon.
A. B. Sherman ..... Morrisburg, Canada.
B. F. Sherman..... 60 Elizabeth, house 64 Elizabeth, Ogdensburg.
R. R. Sherman ..... Canton.
Hiram D. Smith ..... Nicholville.
William P. Stone ..... Brasher Falls.
L. Stowers ..... Waddington.
A. C. Taylor ..... Heuvelton.
A. D. Thompson..... Norfolk.
S. C. Wait ..... Gouverneur.
E. C. Walsh..... Madrid.
Ephraim Whitney..... Massena.
W. C. Wood ..... Brasher Falls.

SARATOGA COUNTY.

[Annual meeting in June, at Ballston Spa.]

MEMBERS.

Drs.	R. L. Allen	Saratoga Springs.
	Myron N. Babcock	Mechanicsville.
	J. B. Bacon	Saratoga Springs.
	N. H. Ballou	Mechanicsville.
	C. Boughton	Waterford.
	Oliver Brisbin	Schuylerville.
	C. D. Bull	Stillwater.
	A. B. Burger	Gansevoort.
	D. B. Burrows	Burnt Hills.
	J. R. Colby	Schuylerville.
	M. Colby	Dean's Corners.
	C. S. Grant	Saratoga Springs.
	D. Herrick	Jessup's Landing.
	J. C. Herrick	Corinth.
	Frank Johnson	Stillwater.
	J. G. Johnson	Greenfield Centre.
	M. Lewis	Ballston Spa.
	Henry D. Losee	Schuylerville.
	R. E. McEwen	Saratoga Springs.
	S. Moore	Ballston Spa.
	B. W. Noxon	do
	Truman Parkman	Rock City.
	S. Peters	Crescent.
	C. Preston	Galway.
	J. R. Preston	Schuylerville.
	L. B. Putnam	Saratoga Springs.
	T. B. Reynolds	do
	S. N. Rowell	Malta.
	F. A. Sherman	Ballston Spa.
	William Tibbitts	Mechanicsville.
	A. Van Wart	Vicker's Ferry.
	L. F. Whiting	Saratoga Springs.

SCHENECTADY COUNTY.

[Annual meeting at Schenectady, second Tuesday in January. Semi-annual, second Tuesday in June.]

OFFICERS.

Drs. Stephen G. Delamater, President.
B. A. Mynderse, Vice-President.
Livingston Ellwood, Secretary.
G. W. Van Voast, Treasurer.

Censors.

Dr. Charles Hammer, Dr. B. A. Mynderse.
Dr. Geroe Green.

Delegate to State Medical Society.

Dr. Alexander M. Vedder.

Delegate to American Medical Association.

Dr. Alexander M. Vedder.

Committee on Ethics.

Dr. Robert Fuller, Dr. Charles Hammer.
Dr. James D. Jones.

MEMBERS.

Drs.	N. S. Cheeseman	Glenville.
	N. G. Daggett	Schenectady.
	S. G. Delamater	Duanesburgh.
	W. N. Duane	Schenectady.
	Livingston Ellwood	do
	Alexander Ennis	Van Vechten.
	Robert Fuller	Schenectady.
	Geroe Green	do
	Charles Hammer	do
	James D. Jones	do
	B. A. Mynderse	do
	G. W. Van Voast	do
	A. M. Vedder	do
	Andrew Veeder	do
	E. A. Young	Glenville.

SCHOHARIE COUNTY.

REORGANIZED SEPTEMBER 21, 1857.

[Annual meeting, first Tuesday in June; semi-annual, first Tuesday in November, alternately between the villages of Schoharie and Cobleskill.]

OFFICERS.

Drs. R. J. Roscoe, President.
Lemuel Cross, Vice-President.
George M. Teeple, Secretary.
David Frazier, Treasurer.

Censors.

Drs. Henry D. Wells, Drs. David Frazier,
Lemuel Cross, George M. Teeple,
Dr. John I. Swart.

Delegate to State Medical Society.

Dr. William Lamont.

MEMBERS.

Drs. Hiram Becker	Central Bridge.
E. O. Bruce	Hyndsville.
Darius Coye	——
Lemuel Cross	Cobleskill.
Volney Danforth	Middleburgh.
Charles Dickinson	Seward Valley.
Alexander Ennis	Esperance.
Nelson Fanning	Catskill.
Nelson Fanning, Jr	Gilboa.
George M. Fox	Cobleskill.
David Frazier	do
John Green	Sharon Springs.
C. W. Havens	Summit.
J. D. Havens	Eminence.
J. S. Herrick	Argusville.
John Hotaling	Gallupville.
William Lamont	Charlotteville.
G. H. Leonard	Richmondville.
Peter E. Minor	do
D. Norwood	Esperance.
John Pindar	Gallupville.

Drs. R. J. Roscoe..... Carlisle.
John Ruland ..... ——
Friend W. Schoeffer ..... Breakabeen.
Isaac F. Scott..... Governor's Corners.
John I. Swart..... Schoharie.
Peter S. Swart..... do
George M. Teeple..... Sloansville.
John L. Van Alstyne..... Richmondville.
Sylvester M. Van Alstyne.. do
C. C. Van Dyck ..... Schoharie.
Philip P. Warner..... Barnesville.
H. D. Wells.... ..... Middleburgh.
Ira Zeh..... Gallupville.

SCHUYLER COUNTY.

[Annual meeting, second Tuesday in January. Semi-annual meeting, second Tuesday in July.]

Officers.

Drs. George D. Bailey, President.
J. B. Ames, Vice-President.
M. L. Bennett, Secretary.
J. W. Thompson, Treasurer.

Censors.

Dr. W. H. Fish, Dr. G. O. Smith
Dr. O. B. Sherwood.

Delegate to State Medical Society.

Dr. J. W. Thompson.

Members.

Drs. J. B. Ames..... Havana.
G. D. Bailey ..... do
A. R. Barton ..... Watkins.
Wm. A. Beach..... Peach Orchard.
Robert Bell..... Monterey.
M. L. Bennett..... Watkins.
C. T. Bliss ..... do
D. W. Burge ..... Peach Orchard.
Enos Canfield..... Alpine.
H. H. Fish..... Mecklenburg.
W. H. Fish..... do

Drs. M. D. Hawes ..... North Hector
Lyman Hughey..... Watkins.
S. Lott..... Reading Centre.
N. Nevison..... Burdett.
S. B. H. Nichols ..... Moreland.
Horace Seaman ..... Beaver Dam.
O. B. Sherwood..... Cayutaville.
G. O. Smith..... Odessa.
J. W. Thompson..... Watkins.
E. B. Wager ..... Havana.

SENECA COUNTY.

[Annual meeting, second Wednesday in July. Semi-annual meeting, second Wednesday in January, at such places as the society may direct.]

OFFICERS.

Drs. Alfred Emens, President.
William A. Swaby, Vice-President.
S. R. Welles, Secretary.
A. A. Alleman, Treasurer.

Censors.

Dr. W. W. Wheeler, Dr. E. Lester,
Dr. Frederick Glauner.

Delegate to State Medical Society.

Dr. W. A. Swaby.

MEMBERS.

Drs. A. A. Alleman ..... Waterloo.
A. J. Alleman ..... Varick.
Alfred Bolter..... Ovid.
J. B. Chapin ..... Willard Asylum, Ovid.
C. C. Coan ..... Ovid.
Lyman Congdon ..... Willard Asylum, Ovid.
G. W. Davis ..... Seneca Falls.
John Denniston..... Ovid.
Richard Dey ..... Romulus.
Jeremiah Dunn..... Lodi.
Alfred Emens ..... Farmer Village.
Frederick Glauner..... Varick.
James Kennedy, Jr..... Lodi.

Drs. Elias Lester ..... Seneca Falls.
Lewis Post ..... Lodi.
E. J. Schoonmaker ..... Magee's Corners.
Wm. A. Swaby ..... Seneca Falls.
Gardner Welles..... Waterloo.
S. R. Welles ..... do
Charles L. Wells ..... Willard Asylum, Ovid.
C. C. Wheeler ..... Farmer Village.
W. W. Wheeler ..... do
C. M. Woodward..... Waterloo.

STEUBEN COUNTY.

[Annual meeting, at Bath, second Tuesday in June. Semi-annual meeting in January, and the triennial the second Tuesday in September, at such place as the society may select.]

Officers.

Drs. A. B. Case, President.
Thomas Shannon, Vice-President.
J. Stratton Harlow, Secretary.
Samuel Ensign, Treasurer.

Censors.

Dr. C. S. Parkhill, Dr. I. L. Goff,
Dr. E. Bennett.

Delegates to State Medical Society.

Dr. Samuel Ensign, Dr. J. B. Graves.

Members.

Drs. H. R. Ainsworth..... Addison.
E. Allison..... Wayne.
E. Bennett ..... Prattsburg.
J. W. Black..... Bath.
J. W. Brown ..... Addison.
A. B. Case ..... Howard.
D. L. Case ..... do
W. S. Cheney ..... Prattsburg.
D. F. Chittenden ..... Addison.
D. F. Cridler ..... Hornellsville.
W. R. Crocker..... Cameron.
J. S. Dolson..... Hornellsville.
A. Edelin ..... Corning.

Drs.	Samuel Ensign	Bath.
	I. L. Goff	Avoca.
	C. M. Graves	Corning.
	J. B. Graves	do
	W. T. Green	Hornellsville.
	J. Stratton Harlow	Bath.
	M. N. Harrington	Corning.
	L. Healy	Cohocton.
	F. M. Lockwood	Bradford.
	H. C. May	Corning.
	A. F. Mills	do
	J. Mitchell	Addison.
	Samuel Mitchell	Cameron Mills.
	C. S. Parkhill	Howard.
	R. F. Parkhill	do
	C. Patterson	Avoca.
	M. Perry	Troupesburg.
	Byron Pierce	Cooper's Plains.
	A. Purdy	Jasper.
	J. Robinson	Hornellsville.
	Thomas Shannon	Campbell.
	E. Shattick	Hornellsville.
	W. H. Sheffield	Jasper.
	J. P. Smith	Bath.
	P. K. Stoddard	Prattsburg.
	M. A. Tallmadge	Bradford.
	M. Terry	Painted Post.
	H. Van Dusen	do
	J. Ward, Jr	Hornellsville.
	Farand Wylie	Bath.

SUFFOLK COUNTY.

[Annual meeting at Riverhead, fourth Tuesday in April. Semi-annual meeting at Patchogue, fourth Tuesday in November.]

OFFICERS.

Drs. W. S. Preston, President.
E. H. Hamill, Vice-President.
F. Thayer, Secretary.
H. P. Terry, Treasurer.
R. H. Benjamin, Librarian.

Censors.

Dr. A. B. Luce, Dr. A. L. Sweet,
Dr. Clark Wright.

Delegates to State Medical Society.

Dr. W. Hewlett, Dr. E. E. Skinner.

Alternates.

Dr. L. D. Wright, Dr. F. Thayer.

Delegate to American Medical Association.

Dr. A. G. Thompson.

Members.

Drs.	E. C. Baker	Yaphank.
	R. H. Benjamin	Riverhead.
	B. D. Carpenter	Cutchogue.
	Joel S. Conklin	Melville.
	James Gildersleeve	Port Jefferson.
	John W. Green	Sayville.
	E. H. Hamill	Islip.
	W. W. Hewlitt	Babylon.
	E. F. Jarvis	Moriches.
	A. B. Luce	Riverhead.
	J. R. Mowbray	Bay Shore.
	W. S. Preston	Patchogue.
	James Rice	do
	Barton D. Skinner	Greenport,
	E. D. Skinner	do
	E. D. Stillwell	Sag Harbor.
	A. L. Sweet	Setauket.
	H. P. Terry	Riverhead.
	Foster Thayer	do
	A. G. Thompson	Islip.
	D. B. Van Scoy	Amaganset.
	Clark Wright	Jamesport.
	Levi D. Wright	Bridgehampton.
	Nathan H. Wright	do

SULLIVAN COUNTY.

[Annual meeting, second Wednesday in June.]

OFFICERS.

Drs. David H. Decker, President.
William S. Webster, Vice-President.
B. G. McCabe, Secretary.
E. F. Quinlan, Treasurer.

Censors.

Drs. T. W. Bennett, B. G. McCabe, J. L. La Moree, Isaac Purdy, Dr. E. F. Quinlan.

Delegate to State Medical Society.

Dr. B. G. McCabe.

MEMBERS.

Drs.	William L. Appley	Cochecton.
	T. W. Bennett	Jeffersonville.
	O. A. Carroll	Callicoon Depot.
	David H. Decker	Narrowsburgh.
	H. M. Edsall	Wurtsboro.
	A. A. Gillespie	Bethel.
	J. L. La Moree	Grahamville.
	B. G. McCabe	Monticello.
	David Matthews	do
	S. M. Mitchell	do
	George R. Perry	Glen Wild.
	Isaac Purdy	Mongaup Valley.
	Ed. F. Quinlan	Monticello.
	H. H. Robinson	Jeffersonville.
	John D. Watkins	Liberty.
	William S. Webster	do
	L. M. Wheeler	Rockland.

TIOGA COUNTY.

No county society.

TOMPKINS COUNTY.

[Annual meeting, fourth Wednesday in October. Semi-annual meeting, fourth Wednesday in May, at Ithaca.]

Officers.

Drs. Henry B. Chase, President.
W. C. Gallagher, Vice-President.
W. Lamont Wheeler, Secretary.
J. D. Lewis, Treasurer.

Delegates to American Medical Association.

Dr. J. M. Farrington, Dr. William Fitch,
Dr. W. Lamont Wheeler.

Members.

Drs. Isaac S. Briggs	Dryden.
Frank Buckland	——
Henry B. Chase	Jacksonville.
Lyman Congdon	do
C. C. Cook	Newfield.
B. Dunning	Trumansburgh.
C. P. Farlin	Ludlowville.
J. M. Farrington	Trumansburgh.
William Fitch	Dryden.
W. C. Gallagher	Slatersville.
C. P. Godfrey	Jacksonville.
J. R. Gregory	Trumansburgh.
L. Hughey	do
Oliver Laning	Etna.
Richard Laning	McLean.
J. D. Lewis	Trumansburgh.
E. C. Mee	Groton.
J. W. Montgomery	Dryden.
Samuel J. Parker	Ithaca.
S. H. Peck	do
S. P. Sackett	do
W. Lamont Wheeler	do
A. J. White	Trumbull's Corners.

ULSTER COUNTY.

[Annual meeting, first Tuesday in June, at Kingston.]

OFFICERS.

Drs. J. O. Van Hœvenburgh, President.
W. H. Gedney, Vice-President.
Charles W. Deyo, Secretary.
R. Loughran, Treasurer.
George C. Smith, Corresponding Secretary.

Censors.

Drs. A. Crispell, S. Schoonmaker, J. S. Knapp, A. C. Hull,

Delegates to State Medical Society.

Dr. R. Loughran, Dr. A. C. Hull, Dr. A. T. Douglas.

Delegates to American Medical Association.

Drs. A. Crispell, W. H. Gedney, R. Loughran, E. Eltinge, Dr. S. Schoonmaker.

Publishing Committee.

Drs. J. Vedder, C. W. Deyo, J. O. Van Hœvenburgh, R. Loughran.

Delegates to Dutchess and Westchester Medical Societies.

Drs. A. T. Douglas, A. Crispell, J. O. Van Hœvenburgh, W. H. Gedney, Dr. E. Eltinge.

MEMBERS.

Drs. George Barton..... Rondout.
B. R. Bevier, Jr..... Napanock.
E. Brink..... Saugerties.
George Chambers ..... Stone Ridge.
E. D. Chipman ..... Saugerties.
Herman Craft..... Stone Ridge.
A. Crispell ..... Rondout.
Peter Crispell, Jr ..... Hurley.

Drs. J. C. Dart..... Shokan.
William B. Davis ..... E. Front, cor. St. James, Kingston.
T. S. Dawes..... Saugerties.
C. D. Dewitt ..... Quarryville.
W. C. Dewitt..... Saugerties.
C. W. Deyo ..... Kingston.
A. T. Douglas ..... Rondout.
J. W. Dubois..... Hurley ave., cor. Bridge, Kingston.
E. Eltinge..... Schryver's Hotel, Kingston.
E. H. Farrington..... West Hurley.
J. H. Fraker ..... The Corner.
W. H. Gedney..... Milton.
J. M. Griffin ..... ——
T. T. Hamblin..... Saugerties.
D. Hasbrouck ..... Highland.
J. Hasbrouck ..... Port Ewen.
Sol. E. Hasbrouck..... Marlborough.
S. L. Heath ..... Woodstock.
P. D. B. Hornbeck. ..... Wawarsing.
S. E. D. Hornbeck ..... do
A. Huhne..... Rondout.
A. C. Hull ..... Olive.
N. Ingrain ..... Schuyler's Hotel, Kingston.
W. Kemball..... Ulster Park.
J. D. Keyser ..... Wall, near John, Kingston.
J. S. Knapp..... Marlborough.
D. L. Longendyke..... Napanock.
R. Loughran ..... John, Kingston.
L. Lounsbery ..... Stone Ridge.
W. C. Lyman..... Saugerties.
J. N. Miller ..... Highland.
Theodore Millspaugh ..... Shawangunk.
James Oliver, Jr..... Marbletown.
Abijah Otis ..... Ellenville.
E. K. Perkins ..... Rondout.
S. Schoonmaker..... Rosendale.
W. F. Scoresby ..... Ellenville.
S. N. Shaffer ..... Wilbur.
George C. Smith..... Rondout.
J. O. Van Hœvenbergh... Crown, Kingston.
W. A. Van Rensselaer .... Wall, Kingston.

Drs.	John Vedder	Saugerties.
	Jacob Vreeland	Highland.
	J. J. Ward	Ellenville.
	M. V. Wheeler	Esopus.
	H. R. Winter	Phœnicia.
	J. D. Wurts	New Paltz.

WARREN COUNTY.

[Annual meeting third Wednesday in June; alternately at Warrensburgh and Glen's Falls.]

OFFICERS.

Drs. J. G. Porteous, President.
Louis Charette, Vice-President.
D. B. Howard, Secretary.
F. L. R. Chapin, Treasurer.

Censors.

Dr. Daniel Magee, Dr. A. Mallory,
Dr. Samuel Jenkins.

Delegate to State Medical Society.

Dr. Hiram McNutt.

Delegate to American Medical Association.

Dr. M. R. Peck.

MEMBERS.

Drs.	J. W. Cady	Pottersville.
	F. L. R. Chapin	Glen's Falls.
	Louis Charette	Warrensburgh.
	James Ferguson	Glen's Falls.
	D. B. Howard	Warrensburgh.
	E. W. Howard	do
	Samuel Jenkins	Queensburg.
	Hiram McNutt	Warrensburgh.
	Daniel Magee	Chestertown.
	Alfred Mallory	do
	G. R. Martine	Weavertown.
	John T. Parker	Athol.
	M. R. Peck	Glen's Falls.
	J. G. Porteous	Lucerne.
	Morgan W. Pritchard	Chestertown.

Drs. N. E. Sheldon (honorary).. Glen's Falls.
W. C. B. Stewart ..... do

WASHINGTON COUNTY.

Officers.

Drs. Alfred J. Long, President.
Orlo. M. Bump, Vice-President.
Henry Gray, Secretary and Treasurer.

Delegates to State Medical Society.

Dr. Alfred J. Long, Dr. Joseph D. Stewart.

Delegates to American Medical Association.

Dr. Henry Gray, Dr. Asa W. Tupper.

Members.

Drs. C. H. Allen ..... Salem.
Salmon Axtell ..... Fort Ann.
Reuben Blavis ..... Fort Miller.
Orlo. M. Bump ..... Cambridge.
Eber W. Carmichael ..... Galesville.
John Cipperley ..... do
Erskine G. Clark..... Sandy Hill.
Morgan Cole ..... Greenwich.
John E. Comfort ..... Sandy Hill.
Hiram Corliss..... Greenwich.
Asa Fitch ..... Salem.
John J. Flint ..... Fort Edward.
C. O. T. Gillman..... Salem.
Aaron Goodspeed ..... Granville.
H. C. Gray..... Cambridge.
Henry Gray ..... Greenwich.
L. W. Kennedy ..... Cambridge.
John Lambert..... Salem.
Alfred J. Long..... Whitehall.
James S. McNeil..... Argyle.
John H. Madison ..... Hebron.
William H. Miller..... Sandy Hill.
Asahel Perry ..... South Eastern.
Edwin Phillips..... Fort Edward.
A. G. Pierce..... Greenwich.

rs. James Savage..... Argyle.
John C. Sill..... do
Daniel Smart..... Cambridge.
John Stevenson..... North Greenwich.
William G. Stevenson .... Cambridge.
Joseph D. Stewart..... do
Asa W. Tupper..... North Granville.
T. C. Wallace..... Cambridge.
Alfred M. Young..... East Greenbush.

WAYNE COUNTY.

ORGANIZED JUNE 1, 1824.

Meetings are held quarterly, at Newark, Palmyra, Lyons and Clyde. Annual meeting, second Tuesday in July; semi-annual, second Tuesday in January.]

OFFICERS.

Drs. A. F. Sheldon, President.
J. E. Smith, Secretary.
Wm. F. Nutton, Secretary and Treasurer.

Censors.

Drs. C. G. Pomeroy, D. Colvin, L. M. Gaylord, S. A. Sabin.

MEMBERS.

rs. J. N. Arnold..... Clyde.
John M. Besley..... Palmyra.
E. W. Bottom..... Lyons.
J. W. Brant..... Ontario.
—— Briggs..... Newark.
—— Burnett..... Palmyra.
H. N. Burr..... Macedon.
D. Colvin..... Clyde.
N. P. Colvin..... do
A. P. Crafts..... Wolcott.
L. A. Crandall..... Fairville.
W. G. David..... Lyons.
Edwin Draper..... Wolcott.
L. M. Gaylord..... Sodus.
A. F. Gillette..... Lyons.
—— Green..... Huron.
A. T. Hendrick..... Clyde.

Drs. J. M. Horne	Rose Valley.
S. G. House	Marion.
S. Ingraham	Walworth.
C. M. Kingman	Palmyra.
A. W. Marsh	do
W. F. Nutten	Newark.
H. H. Ostrom	Alton.
F. M. Pasco	Red Creek.
—— Plumb	do
C. G. Pomeroy	Newark.
L. A. Reeves	Williamson.
—— Rose	Walworth.
A. S. Russell	Marion.
—— Seaman	Sodus Centre.
A. F. Sheldon	Pultneyville.
J. E. Smith	Clyde.
W. G. Smith	Savannah.
L. S. Sprague	Williamson.
L. W. Sutherland	Marengo.
—— Thirkell	Sodus.
H. D. Vosburgh	Lyons.
S. Weed	Clyde.
E. Whitcomb	Ontario.
Benj. Wilson	Wolcott.
J. M. Wilson	do
E. R. Wright	Marion.
A. Yale	Sodus.

WESTCHESTER.

Officers.

Drs. James W. Scribner, President.
Horace Caruthers, Vice-President.
William H. Helm, Secretary.
J. Foster Jenkins, Treasurer.

Censors.

Dr. G. J. Fisher, Dr. P. Stewart,
Dr. Seth Shove.

Delegates to State Medical Society.

Dr. William H. Helm, Dr. J. H. Pooley,
Dr. H. Ernst Schmid.

Delegates to the American Medical Association.

Drs. G. W. Hodgson, Drs. S. Shove.
H. L. Horton, Z. E. Lewis.

MEMBERS.

Drs. T. J. Acker	Croton Landing.
E. S. F. Arnold	Yonkers.
William Badger	Hastings.
George Bayles	Irvington.
Stephen W. Bowles	Yonkers.
Horace Caruthers	Tarrytown.
Curtis Chapman	Peeksill.
J. Francis Chapman	Katonah.
G. C. S. Choate	
A. M. Clark	White Plains.
Isaac G. Collins	Sing Sing.
John E. Comfort	Morrisania.
Albert H. Crump	Jerome.
James H. Curry	Shrub Oak.
Charles A. Dalgairns	Tarrytown.
E. Mortimer Deey	Kingsbridge.
P. De Marmon	Riverdale.
V. V. Elting	Tremont.
G. J. Fisher	Sing Sing.
Hosea Fountain	Peekskill.
Joshua Fowler	Pleasantville.
N. H. Freeland	Brewsters.
A. W. Gates	Yonkers.
C. W. Haight	Pleasantville.
William H. Helm	Sing Sing.
George W. Hodgson	White Plains.
H. L. Horton	Morrisania.
J. Foster Jenkins	Yonkers.
Nathan S. King	Mott Haven.
G. A. Kretchmar	Morrisania.
Charles A. Lee	Peekskill.
Charles E. Lee	Purdy's Station.
Z. Edwards Lewis	West Farms.
J. J. Linson	Tarrytown.
S. S. Lounsberry	Mamaroneck.
E. F. Matthews	Port Chester.

Drs. R. H. Melius ..... Morrisania.
Peter Moulton (honorary).. New Rochelle.
Charles J. Nordquist..... Tuckahoe.
L. F. Pelton..... Mt. Kisco.
J. H. Pooley, Jr..... Yonkers.
William C. Prior..... New Rochelle.
C. A. Rodenstein..... Fordham.
J. D. Sands ..... Port Chester.
P. R. H. Sawyer..... Bedford.
H. Ernst Schmid..... White Plains.
James W. Scribner ..... Tarrytown.
Seth Shove..... Katonah.
Thomas Snowden ..... Peekskill.
William S. Stanley..... Mamaroneck.
P. Stewart..... Peekskill.
H. C. Todd..... Dobb's Ferry.
Augustus Van Cortland.... New Rochelle.
William A. Varian ..... South Yonkers.
George W. Wells ..... West Farms.
J. G. Wood ..... Croton Falls.
James Woolsey (honorary), Bedford.

WYOMING COUNTY.

No county society.

YATES COUNTY.

[Annual meeting, first Tuesday in June. Semi-annual meeting, first Tuesday in February.]

Officers.

Drs. Walter Wolcott, President.
Alex. B. Sloan, Vice-President.
* Guy L. Doubleday, Secretary and Treasurer

Censors.

Drs. Alex. B. Sloan, Drs. Eben S. Smith,
Fletcher M. Hammond, Wm. Wixon,
* Dr. Guy L. Doubleday.

Delegate to State Medical Society.

Dr. Wm. Oliver.

* Deceased.

Delegates to American Medical Association.

Dr. William Oliver, Dr. George W. Brundage.

MEMBERS.

Drs.	Lewis A. Birdsall	New York City.
	George W. Brundage.....	W. Dresden.
	Robert P. Bush.....	Branchport.
	Wynans Bush.....	do
	Israel Chissom	Italy Hill.
	W. H. Crane	Benton Centre.
	J. I. Denman.....	Bellona.
	G. Z. Dimock.....	Dundee.
	Guy L. Doubleday	Italy Hill.
	Fletcher M. Hammond....	Penn Yan.
	John Hatmaker.....	do
	William Oliver	do
	Ashbel R. Otis.....	Dundee.
	Alexander B. Sloan.....	Bellona.
	Eben S. Smith.....	W. Dresden.
	Frank Smith	Penn Yan.
	Byron Spence.....	Starkey.
	Job S. Stevens.....	Penn Yan.
	William Wixom	Italy Hill.
	John D. Wolcott.....	Penn Yan.
	Oliver P. Wolcott.....	Milwaukie, Wisconsin.
	Walter Wolcott.....	Dundee.

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Medical Society of the State of New York (Founded 1807)
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